



INSTITUTE FOR DEFENSE ANALYSES

**Effectiveness of DoD Humanitarian
Relief Efforts in Response to
Hurricanes Georges and Mitch**

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14. ABSTRACT This paper describes two large natural disasters that occurred in the Caribbean and Central America during 1998, Hurricanes Georges and Mitch, and the U.S. Government's response to each event. These two extensive disasters were used as case studies to assess the overall capacity of the Department of Defense to respond to large-scale natural disasters as part of an international effort. The study identifies areas within the DoD that need improvement, and recommends specific measures to enhance the U.S. Government response capabilities for future humanitarian assistance operations.					
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OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

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SPECIAL OPERATIONS/
LOW-INTENSITY CONFLICT

MEMORANDUM FOR: (SEE DISTRIBUTION)

SUBJECT: EFFECTIVENESS OF DOD HUMANITARIAN RELIEF EFFORTS IN
RESPONSE TO HURRICANES GEORGES AND MITCH

U.S. military forces will continue to be called upon to provide humanitarian assistance following foreign natural disasters. Accordingly, the Office of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict (OASD SO/LIC), Office of Peacekeeping and Humanitarian Affairs (PK/HA), requested that the Institute for Defense Analyses (IDA) examine U.S. military capacity to respond to such events. Using Hurricanes Georges and Mitch, at SO/LIC's request, as case studies, IDA:

- Assessed the capacity of U.S. DoD to respond to large-scale natural disasters as part of a major international effort
- Identified areas within DoD that need improvement, and
- Recommended specific measures to enhance USG response capabilities for future humanitarian assistance operations.

Knowing of your interest in this topic, I am enclosing the results of IDA's analysis. The study focuses on the response of DoD organizations to Hurricanes Georges and Mitch, two massive natural disasters that struck the Western Hemisphere in late 1998. The study provides basic information on DoD's response, including a chronology of key events, phases of the operation, organizations engaged, military command and control arrangements, coordination with non-DoD agencies, assessment and requirements determination, deployment/redeployment, missions accomplished, impact on the local populace, and budgetary issues.

While examining these specific operations in some detail, the study focuses on lessons related to DoD's overall readiness to respond to foreign disasters. The final product includes 68 specific Findings and 167 concrete Recommendations developed from the analysis. Your observations on the study and conclusions would be most welcome by this office. Please contact Mr. Todd Harvey at (703) 614-0022 or COL Tom Stott at (703) 614-0028. The entire study is also available through the Defense Technical Information Center (DTIC).

Sincerely,

A handwritten signature in dark ink, reading "John F. Christiansen", is positioned above the printed name.

John F. Christiansen
Acting Deputy Assistant Secretary of Defense
for Peacekeeping and Humanitarian Assistance

INSTITUTE FOR DEFENSE ANALYSES

IDA Paper P-3560

**Effectiveness of DoD Humanitarian
Relief Efforts in Response to
Hurricanes Georges and Mitch**

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PREFACE

This document was prepared by the Institute for Defense Analyses (IDA) for the Deputy Assistant Secretary of Defense for Peacekeeping and Humanitarian Assistance, Office of the Assistant Secretary of Defense (Special Operations and Low-Intensity Conflict) in partial fulfillment of the task “Effectiveness of DoD Humanitarian Relief Efforts in Response to Hurricanes Georges and Mitch.” Using these two extensive 1998 disasters in the Caribbean and Central American regions as case studies, this study: (1) assesses the overall capacity of DoD to respond to large-scale foreign natural disasters, as part of an international effort; (2) identifies areas within DoD that need improvement; and, (3) recommends specific measures to enhance USG response capabilities for future humanitarian assistance operations.

IDA would like to thank the following organizations, which were among those engaged in the disaster response, for their contributions to this study: the Office of the Secretary of Defense; the Joint Staff; the Military Services; Defense Agencies; Headquarters, U.S. Southern Command (SOUTHCOM); SOUTHCOM's component organizations; supporting commands such as JFCOM and TRANSCOM; the U.S. Coast Guard; forward stationed U.S. military units in the affected region; civilian U.S. government agencies, including the National Security Council staff; the U.S. Agency for International Development, and its Office of U.S. Foreign Disaster Assistance; the Department of State, including U.S. Embassies in affected countries; the Federal Emergency Management Agency; the U.S. Department of Transportation; Puerto Rican government agencies; the United Nations; numerous international, intergovernmental, and non-governmental organizations; and finally, but not least, civilian and military organizations of Barbados, the Dominican Republic, El Salvador, Guatemala, Honduras, and Nicaragua. IDA would also like to thank Yolanda Prescott for her work as translator for this project.

The IDA Technical Review Committee was chaired by Mr. Thomas P. Christie, and consisted of Mr. Gene Dewey, MG William Farman, USA (Ret.), BG William Fedorochko, USA (Ret.), Mr. Dayton Maxwell, and GEN John Sheehan, USMC (Ret.).

EFFECTIVENESS OF DOD HUMANITARIAN RELIEF EFFORTS IN RESPONSE TO HURRICANES GEORGES AND MITCH

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EXECUTIVE SUMMARY

A. STUDY BACKGROUND

In the fall of 1998, two unusually severe hurricanes, Georges and Mitch, struck the Western Hemisphere within a month, causing extensive damage in nations within U.S. Southern Command's (SOUTHCOM's) area of responsibility (AOR). U.S. military forces mounted large-scale responses to these disasters, in conjunction with the affected countries, civilian relief agencies of the United States government (USG), foreign governments, the UN, non-governmental organizations (NGOs), private businesses, and individuals. The Commander-in-Chief, U.S. Southern Command (USCINCSO) created two joint task forces (JTFs) for disaster response, reoriented the mission of a third JTF toward relief efforts, and employed more than 7,000 U.S. military personnel deployed to the region to assist with the response to the damage caused by these events. In total, DoD expended more than \$200 million for relief and rehabilitation following these storms.

Because U.S. military forces are likely to be called upon in the future to provide humanitarian assistance following foreign natural disasters, the Office of the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (OASD SO/LIC), Office of Peacekeeping and Humanitarian Assistance (PK/HA), requested that the Institute for Defense Analyses (IDA) examine the U.S. military's capacity to respond to foreign natural disasters. Specifically, IDA was charged with examining the DoD response to these two storms as case studies in order to:

- Assess the capacity of U.S. DoD to respond to large-scale natural disasters as part of a major international effort
- Identify areas within DoD that need improvement
- Recommend specific measures to enhance USG response capabilities for future humanitarian assistance operations.

The study focuses on the response of DoD organizations and units to Hurricanes Georges and Mitch in fall and winter, 1998. Although the focus of the analysis is on DoD, the USG and international responses in which the DoD efforts were embedded are also considered. The study provides basic information on DoD's response, including a chronology of key events, phases of the operation, organizations engaged, military

command and control arrangements, coordination with non-DoD agencies, assessment and requirements determination, deployment/redeployment, missions accomplished, impact on the local populace, and budgetary issues. However, this is not a detailed history of the specific SOUTHCOM operations. The study focuses on lessons related to DoD's overall readiness to respond.

The study identifies Findings in 23 categories relevant to DoD disaster response operations. These categories are listed in Table ES-1.

Table ES-1. Study Categories

<u>Category</u>	<u>Code</u>	<u>Category</u>	<u>Code</u>
• Assessment Issues	AI	• Helicopter Support	HS
• Command and Control	CC	• Information Support	IS
• DoD Internal Coordination	CD	• Legal Affairs	LA
• Interface with Host Nations	CH	• Logistics Support (less transportation and movement control)	LS
• Interagency Operations (USG)	CI	• Transportation and Movement Control	LT
• Communications and Computers	CK	• Medical Support	MS
• Interface with Non-USG Organizations and Governments	CN	• Organization and Training	OT
• Doctrine and Procedures	DP	• Public Affairs, including Donations	PA
• Engineering Support	ES	• Personnel Support	PS
• Financial Operations	FO	• Reserve Forces	RF
• Force Protection and Security	FP	• Special Operations Forces	SF
• Humanitarian Operations (non-engineering; non-medical)	HO		

Findings were used to identify areas needing improvement and to generate one or more Recommendations to enhance DoD response capabilities for humanitarian operations. In keeping with the purpose of this study, the analysis of each Finding was conducted in order to assess DoD's overall capability to respond to foreign natural disasters globally, not to "grade" any element of the DoD performance in Hurricanes Georges and Mitch *per se*. Each Recommendation met five criteria: (1) it evolved from the observations of those personnel involved in the hurricane operations; (2) it addressed a specific Finding identified in the research; (3) it is intended to improve the appropriateness, timeliness, or effectiveness of DoD's response to natural disasters; (4) it was addressed to a specific component of the U.S. Department of Defense for action; and (5) it consisted of a discrete, concrete, and feasible action item.

Appendix B of this study describes in detail the 69 Findings and 162 Recommendations developed from this analysis, grouped by study categories. Appendix B, therefore, is a central component of this study.

B. THE STORMS AND THE INTERNATIONAL HUMANITARIAN RESPONSE

1. Impact of Hurricane Georges

The severe meteorological phenomena associated with Georges affected both foreign territories and U.S. territory (especially Puerto Rico) and resulted in a substantial number of deaths and injuries, and widespread property damage. According to NOAA, the 602 deaths caused by Hurricane Georges made it the most deadly storm in the Atlantic Basin in the 20th century. Property damage in the U. S. mainland and territories alone approached \$6 billion.

2. Impact of Hurricane Mitch

Three weeks after Hurricane Georges dissipated, Hurricane Mitch began its destructive odyssey through the Caribbean Sea, mainland Central America, and the Gulf of Mexico. The winds and precipitation associated with Mitch created a major disaster for Central Americans. Some 9,000 victims lost their lives, and a similar number were missing and presumed dead. Estimates of damage ranged from a minimum of \$5 billion to more than \$7 billion.

3. Response to Georges

a. International Response

Although the humanitarian response to Hurricane Georges paled in comparison to Mitch just a month later, the Georges relief response was substantial. A long list of donors – nations, regional organizations, international organizations, NGOs, and private companies and individuals – from within and outside the region provided money, materiel, skilled staff, or transport assets to the affected countries or territories. Foreign relief provided in the immediate aftermath of Hurricane Georges exceeded \$45 million. The USG was the largest single contributor.

b. USG Response to Georges

The USG federal disaster response to Hurricane Georges concentrated on the severe damage caused in Puerto Rico, a response managed by the Federal Emergency Management Agency (FEMA), largely outside the scope of this study. Foreign relief contributions by the USG were made to the eastern Caribbean, the Dominican Republic, and Haiti. USG-sponsored emergency assistance consisted of assessment teams, food aid, shelter supplies, related emergency materiel (such as water containers and blankets), and funding for helicopters and other DoD support aircraft utilized for assessment, search and rescue (SAR), and relief delivery.

4. Response to Mitch

a. International Response

The international relief effort following Hurricane Mitch was large and complex. Virtually the entire worldwide humanitarian community contributed to the response, including major UN agencies, more than 30 countries inside and outside the region, intergovernmental and international organizations such as the International Federation of the Red Cross, and hundreds of NGOs. The resources provided by this array of contributors were sizeable. The UN recorded contributions from all sources of \$403 million by 1 December 1998. Of this amount, the largest percentage went to Honduras, the nation most severely affected, with Nicaragua, El Salvador, and Guatemala receiving substantial aid. As was the case after Hurricane Georges, the USG was the largest single donor to the relief effort. On 4 December 1998, the USG announced its emergency relief to Central America totaled \$263 million.

b. USG Response to Mitch

The USG relief and rehabilitation efforts were large and multifaceted. In addition to DoD efforts, other USG programs included food assistance, blankets and shelter materials, water system repairs, and health and sanitation programs. The USG funded assessment teams, deployed Disaster Assistance Response Teams (DARTs) from the Office of U.S. Foreign Disaster Assistance (OFDA) to the region, provided airlift and sealift to Central America, funded U.S. military helicopter transport within affected areas, and financially supported many local relief efforts of host governments, regional organizations such as the Pan-American Health Organization (PAHO), and NGOs. USG interagency coordination was managed through several *ad hoc* mechanisms in Washington and among operational USG agencies in Central America. In Washington,

core mechanisms included a task force sponsored by the National Security Council (NSC). Many participants did not find the *ad hoc* USG mechanisms sufficient for a disaster response operation as extensive as the relief activities for Hurricane Mitch.

C. THE DEPARTMENT OF DEFENSE HUMANITARIAN RESPONSE

1. Georges Response

a. Primary Locations Where DoD Forces Assisted

U.S. military assistance focused on Puerto Rico, in support of FEMA, and in the Dominican Republic, in support of the Office of Foreign Disaster Assistance (OFDA). U.S. military personnel, stationed in Haiti as part of Support Group Haiti, provided limited assistance in that nation. In the eastern Caribbean islands, the U.S. military provided limited but important support.

b. Scope and Nature of DoD Operations, Including Main Assets Employed

The DoD asset in greatest demand following Hurricane Georges was air transport, both strategic lift into the area of operations (AO) and theater lift to distribute relief supplies. Another major asset employed was a Disaster Relief Joint Task Force (DRJTF), designated JTF Full Provider. JTF Full Provider conducted operations in support both of Puerto Rico domestic relief operations and foreign disaster assistance. In addition, U.S. military personnel provided management support to disaster operations, including assessment, communications, and logistics expertise, as well as logistics hubs. In Puerto Rico, Naval Station Roosevelt Roads (NSRR) became the logistics hub for FEMA relief operations. In the Dominican Republic, the Military Assistance Advisory Group (MAAG) provided essential support at Santo Domingo airport for the relief effort.

c. Command and Control Architecture

U.S. military operations responding to Hurricane Georges were managed primarily through the geographic combatant command, SOUTHCOM, in close coordination with other USG agencies. USCINCSO managed the relief operation consistent with the *Federal Response Plan* for domestic disaster response operations. Judging that additional assets were required, USCINCSO subsequently created JTF Full Provider to apply supplementary resources to Caribbean disaster relief operations, foreign and domestic.

d. Duration of the Response

U.S. military forces were significantly engaged in Hurricane Georges relief activities for 5 weeks, from the time the SOUTHCOM Logistics Response Center (LRC) was activated on 19 September until the FEMA Federal Coordinating Officer (FCO) formally released DoD on 27 October.

e. Financial Resources and Coordination Factors

A substantial portion of DoD relief expenditures following Hurricane Georges was reimbursed by FEMA or OFDA, so that resource generation issues were not significant limiting factors in this operation. Moreover, for the *international* aspects of the relief operation, USG interagency coordination factors had minimal impact on the DoD response. The principal focus during the Hurricane Georges response was the *domestic* disaster response factor: the DoD command and control relationship between Commander, Joint Task Force (CJTF) Full Provider and the designated Defense Coordinating Officer (DCO) in Puerto Rico.

2. Mitch Response

The DoD response to Hurricane Mitch far surpassed the response to Hurricane Georges in scope, complexity, cost, and duration, as well as in the range of policy issues it generated.

a. Primary Locations Where DoD Forces Assisted

U.S. military personnel conducted significant relief operations in the four Central American countries primarily affected by Hurricane Mitch: Honduras and Nicaragua, the two most seriously affected nations, and Guatemala and El Salvador, which suffered moderate damage. In each of the affected countries, U.S. military units concentrated their activities in specified geographic regions, assigned through discussions with host governments to complement ongoing host nation and other responses, rather than operating country-wide. In addition, U.S. military transport assets based in the United States, air and sea, were employed to move large quantities of personnel and materiel to the AO.

b. Scope and Nature of DoD Operations, Including Main Assets Employed

The scope of the U.S. military disaster relief mission in Central America was very large, ultimately costing \$155 million with a maximum deployment of more than 5,000

military personnel and 63 aircraft. U.S. forces provided services including search and rescue, damage assessments, airfield management, food delivery, immunizations against epidemic diseases, veterinary care, bridge and road reconstruction, water purification, liaison, and planning. During these efforts, DoD personnel interfaced with government officials, international and local NGOs, local and third country military forces, UN agencies, banana plantation owners, local religious and community leaders, and traumatized villagers. The overall operations consisted of three phases:

- **Emergency Relief Phase** – commencing when the Hurricane struck Central America and continuing through mid-December 1998
- **Rehabilitation Phase** – commencing in mid-December 1998 and continuing until approximately 26 February 1999
- **Reconstruction Phase (not addressed in this report)** – commencing at the end of the Rehabilitation Phase and continuing into September 1999.

c. Command and Control Architecture

Following a request for deployment from USCINCSO and approval by the National Command Authorities (NCA), the Chairman, Joint Chiefs of Staff (CJCS) issued a deployment order on 4 November for Central America disaster response. From that point, USCINCSO effectively managed the day-to-day DoD relief mission. Initially, USCINCSO utilized the existing JTF Bravo, located at Soto Cano Air Base in Honduras, as his command and control (C2) mechanism throughout Central America. By 7 November, USCINCSO had developed an operational concept that included a second JTF, JTF Aguila, for the management of relief operations in El Salvador, Guatemala, and Nicaragua. The creation of the second JTF, operating with subordinate task forces in each of the three countries in its AOR, allowed the commander of JTF Bravo to focus on the massive devastation in Honduras.

d. Duration of the Response

From the time the first relief flights departed Soto Cano Air Base on 1 November 1998 until the SOUTHCOM Crisis Action Team (CAT) terminated its operations on 26 February 1999, a period of nearly 4 months, U.S. military forces were continuously engaged in disaster relief efforts, albeit at varying levels of intensity. Although the immediate DoD response to save lives was timely, the overall DoD deployment was late relative to the overall relief needs of the stricken populace. Total U.S. military forces deployed across the four nations of Central America would not reach 2,500 until the last

days of November, and would not reach their peak until 18 December, one and one-half months after Hurricane Mitch struck.

e. Financial Resources and Coordination Factors

The U.S. General Accounting Office estimated total DoD costs at approximately \$155 million during the Phase I and Phase II operations on which this study is focused. In order to compile this level of resources, DoD was directed to draw upon a variety of authorities and accounts, including Drawdown Authority; Overseas Humanitarian, Disaster, and Civic Action Funds (OHDACA); CJCS Commander-in-Chief Initiative Funds (CIF); and OFDA funds. The DoD response to Hurricane Mitch highlighted a number of coordination factors, as well. Within the USG, intense humanitarian and political interest in launching a sizable and high-profile relief effort was not matched by a comparable level of operational coordination among USG agencies. Coordination problems occurred in gathering and validating damage assessment data, shaping the overall USG response, establishing relief priorities, managing public affairs (including publicly donated commodities), sourcing adequate funding, and transitioning from relief to reconstruction programs. Coordination problems stretched beyond the USG interagency system to relations with other nations and international relief agencies that responded to the Mitch disaster.

D. MEASURES OF EFFECTIVENESS DURING DISASTER OPERATIONS

Neither in Hurricane Mitch nor in DoD's response to any natural disaster can relief operations be rated "effective" or "ineffective" across the board, according to a universally accepted scale. Recognizing that defining measures of effectiveness (MOEs) will be an issue in any foreign disaster assistance operations, this study established criteria to measure effectiveness in such operations. These criteria were used during this study to evaluate DoD's disaster response capabilities and to define areas for improvement. In tabular form, as illustrated generically in Table ES-2, these MOEs may be utilized as a tool, not only for post-event evaluation, but also to guide planners of future U.S. military disaster relief operations.

Table ES-2. MOEs in Foreign Disaster Assistance Operations

Measure of Effectiveness	Scale
<i>Were the disaster relief operations:</i>	<i>Effective ----- Ineffective</i>
Based on sound data and assessment?	Yes ----- No
Defined by quantifiable MOEs?	Yes ----- No
Well coordinated with other responders?	Yes ----- No
Timely, based on needs of victims?	Yes ----- No
Effective in meeting victims' priorities?	Yes ----- No
Consistent with existing doctrine?	Yes ----- No
At lowest cost, consistent with mission?	Yes ----- No
Conducted with units tailored to mission?	Yes ----- No

Quantifiable MOEs that relate mission effectiveness to attainment of a specific humanitarian end state – such as “potable water provided for 50,000 victims” – may have particular utility for U.S. military planners and commanders in future foreign disaster operations. More widespread use of quantifiable MOEs in planning and conducting operations may assist in defining mission success and in fixing the mission end state. When U.S. military forces are engaged in large-scale foreign disaster assistance operations that are likely to be of long duration, definition by DoD planners of quantifiable MOEs for operations by U.S. forces are appropriate.

E. MAJOR ISSUES AFFECTING DOD’S ABILITY TO RESPOND TO FOREIGN DISASTERS

U.S. military commanders and DoD officials can draw on the specific Recommendations of this study to improve performance in specific disaster response operations. In addition, senior policymakers must address certain overarching policy questions that systemically constrain the U.S. military’s disaster response performance. Five of these higher order policy issues follow:

1. The USG interagency response system for large-scale foreign disasters, within which DoD relief operations are embedded, is fundamentally flawed. The USG foreign disaster response system requires fundamental reform, for which the domestic *Federal Response Plan* provides a useful model.

If there is a single consensus finding supported by the many reports and interviews examined for this study, it is that the USG system for managing large-scale, rapid-onset foreign disasters is seriously inadequate. The current USG process is characterized by absence of formal doctrine, uncertain leadership or direction, lack of serious contingency planning, and unclear reporting relationships and funding arrangements. In short, virtually all the elements that should characterize an efficient emergency response system are missing. Ten Findings and 19 Recommendations related to interagency operations are included in this study.

2. Modest, well-designed investments in force management prior to a disaster declaration can substantially improve DoD readiness and rapidity of response.

This study's Findings and Recommendations conclude that an integrated series of force management enhancements, many of which are in themselves relatively modest, can produce a significant improvement in DoD's capability to conduct foreign disaster relief operations. In their most distilled form, the Findings and Recommendations regarding force management argue that DoD can and should provide, at the disaster scene, commanders and staffs more familiar with disaster missions and units more capable in humanitarian operations, and that these outcomes are doable and affordable. This study's analyses of Hurricane Georges, and especially of Hurricane Mitch, suggest key points in the process of planning and conducting a disaster relief operation in which modest management changes would have significantly altered the performance of U.S. military units. For example, recognizing that JTFs will be widely used to manage disaster relief operations, force management reforms are attainable in four categories related to JTFs:

- Pre-designating Humanitarian Assistance/Disaster Response (HA/DR) JTFs
- Pre-designating JTF commanders
- Pre-designating JTF headquarters
- Pre-designating task units for HA/DR missions.

Other force management improvements can be made in the areas of preparing forward-stationed forces, training, personnel support, and mobilization of Reserve

Component forces. Seven Findings and 18 Recommendations in this study relate to force management.

3. The process of translating humanitarian needs encountered during disasters into U.S. military forces and capabilities to meet those needs can be improved.

U.S. military planners at supported, supporting, and subordinate commands, including at the JTF level, expended a great deal of effort to determine accurately the humanitarian needs in the affected region, and to express those requirements in terms of military capabilities to be deployed. In the main, however, DoD planners faced a gap in doctrine and tools to assist their planning efforts, and had to rely primarily on individual experience and the application of planning tools for calculating combat needs to the HA/DR environment to arrive at military force requirements. Although joint doctrine provides a great deal of guidance on planning processes, in general, and substantial guidance on planning factors for SSCs, the complex and, for military planners, somewhat arcane procedure for translating civilian humanitarian needs into military capabilities and, ultimately, units remains an understudied, little understood topic.

There are a number of useful initiatives, approaches, tools, and models that could assist U.S. military planners in translating disaster relief needs into military capabilities. In preparing for the Hurricane Mitch response, DoD planners would have benefited from (1) a consolidated USG needs assessment that specified requirements in terms of humanitarian “service modules” that could be translated into either civilian or military capabilities; (2) a consequence assessment tool permitting quantifiable estimates of civilian need; and (3) a planning tool to translate the humanitarian requirement into specific capabilities of U.S. military units. Seven Findings and 18 Recommendations in this study relate to determination of force requirements.

4. DoD’s coordination with multiple responding entities can and should be substantially improved, both in the U.S. military’s overall approach to disaster response operations and, specifically, at the scene of a foreign disaster.

The Findings and Recommendations compiled for this study suggest that the principle of military coordination with civilian relief agencies, while not violated during Hurricane Georges and Mitch operations, was treated as an ancillary rather than central portion of the disaster relief operations. Notably absent from the humanitarian relief architecture in the four most seriously affected nations was a Humanitarian Operations Center (HOC), maintained by the international community during the relief phase of

operations. Nor was a Civil-Military Operations Center (CMOC) or other formal civil-military coordination center created during this phase of operations. An important issue emanating from the Hurricane Mitch experience is the essentiality of devoting focused, visible resources to civilian-military coordination efforts during rapid-onset natural disasters overseas where military forces support civil authorities. Ensuring that greater prominence is given to such coordination structures in future disaster assistance should be an important issue for DoD. Seven Findings and 18 Recommendations in this study relate to civilian-military coordination during relief operations.

5. Effective, timely response to large-scale, rapid-onset disasters demands more reliable funding mechanisms, within DoD and within the USG interagency system.

A critical requirement for launching an effective, timely USG response to disasters is the assurance that legislative authority and financial resources will be available to undergird the mission. As currently structured, the interagency system has sufficient overall resources to meet probable overseas relief needs, but insufficient contingency plans exist for how, and under what conditions, those resources will be made available for DoD or other USG disaster response operations. Interagency uncertainty during the early stages of the Mitch response over which agency would cover the costs of relief efforts likely contributed to delays in the USG responses, and certainly bred a degree of confusion in the interagency planning process. The Findings and Recommendations section of this report argue for more reliable funding mechanisms for overseas disaster response. This study suggests that two avenues should be explored by DoD policymakers to ensure that sufficient funds are available to support U.S. military missions when they are next ordered by the NCA, without stripping funds from competing program priorities. The first avenue is to seek a dedicated funding pool within the DoD budget for disaster relief operations, as an addition to current operating funds. A second approach is to seek a plan for allocating USAID International Disaster Assistance (IDA) account funds to the support of foreign disaster operations mandated by the NCA in a more predictable fashion. One Finding and five Recommendations in this study relate to budget issues.

Underlying the presentation of the five major policy issues are four assumptions that flow from the Hurricanes Georges and Mitch experience about the future of DoD foreign disaster response missions:

- First, this study assumes that foreign disaster relief missions will continue, and may increase in frequency, as global population growth puts more individuals at risk of encountering damaging natural phenomena.
- Second, DoD's performance in assigning military assets to civilian disaster response has been adequate, but can be substantially improved.
- Third, DoD is unlikely to receive substantial additional assets to manage foreign disaster relief missions, so performance improvements must be achieved through enhanced management of existing assets.
- Fourth, DoD should continue to play a substantial supporting role within the USG, rather than assuming a leadership role, in the response to foreign natural disasters, so that improved U.S. military performance relies in part on reform within the USG interagency process.

F. ADDITIONAL FINDINGS ON DOD FOREIGN DISASTER RELIEF OPERATIONS, SYSTEMS, AND CAPABILITIES

Most Findings and Recommendations generated by this study did not relate directly to one of the five major issues described above. However, many contain important information relating to DoD's conduct of foreign HA/DR operations, as reflected in the 1998 hurricane relief operations. The Findings captured in this study, organized by research category, along with Discussion and Recommendations related to these Findings, are located in Appendix B.

CHAPTER I
INTRODUCTION

I. INTRODUCTION

A. BACKGROUND

One of the 16 categories of missions described in Joint Publication 3-07, *Joint Doctrine for Military Operations Other Than War* (MOOTW),¹ is Humanitarian Assistance. This category of operations, in which U.S. military forces have been increasingly engaged, includes natural disasters such as floods, earthquakes and hurricanes, as well as man-made disasters like civil violence or nuclear accidents.

When U.S. military forces respond to natural disasters, especially large-scale natural disasters in foreign countries, U.S. forces face unique and challenging environments. The first challenge is that natural disasters often occur with little warning or, when predicted, strike areas other than predicted by meteorologists or seismologists. The rapid onset of earthquakes, floods, fires or storms confounds normal planning and deployment processes. Following large-scale natural disasters overseas, U.S. military responders encounter additional challenges, including:

- The potential for mass civilian casualties
- A requirement for rapid response to reach victims who are without water, food, or shelter
- A potential requirement for search and rescue (SAR) missions to reach civilians trapped or isolated by the disaster
- Austere and constrained operating environments, when local infrastructure has been damaged by the disaster
- A high risk of infectious diseases for both disaster victims and responding forces, when water and sewer systems have been disrupted
- A requirement for coordination with the host nation, the government of which may be in disarray because of the disaster

¹ The term Smaller Scale Contingency (SSC) also encompasses Humanitarian Assistance. Use of the SSC terminology grew in part out of the deliberations accompanying the Quadrennial Defense Review (QDR) in 1997, and this term is also used in discussions related to Presidential Decision Directive (PDD) 56, on complex contingency operations. The SSC category includes Humanitarian Assistance, which includes the subset Disaster Relief.

- A requirement for coordination with multiple responding relief agencies from the U.S. government (USG), foreign governments, non-governmental organizations (NGOs), the United Nations (UN), and others
- Intense media interest
- A complex process of aligning, within a short timeframe, the needs of civilian victims and the capabilities of military assets configured primarily for warfighting.

The question faced by U.S. military commanders charged with assisting in a major, natural disaster overseas is how to respond effectively and efficiently under these unique circumstances.

Since U.S. military forces are likely to be called upon in the future to provide humanitarian assistance following foreign natural disasters, the Office of the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (OASD SO/LIC), Office of Peacekeeping and Humanitarian Assistance (PK/HA) requested that the Institute for Defense Analyses (IDA) examine the U.S. military's capacity to respond to foreign natural disasters. Based on its significant disaster response experience in virtually every geographic region of the globe, it is widely believed that U.S. Department of Defense (DoD) organizations and units have developed substantial capability to deliver emergency relief assistance following natural disasters. PK/HA asked IDA to assess this capability, to identify areas needing improvement, and to recommend measures to enhance response capabilities. Specifically, IDA was charged with analyzing DoD's operations following two foreign² disasters, the large-scale Hurricane Georges and the extraordinary Hurricane Mitch, which provide excellent case studies to examine DoD's overall disaster relief capability.

In the fall of 1998, two unusually severe hurricanes struck the Western Hemisphere within a month, causing extensive damage in nations within U.S. Southern Command's (SOUTHCOM's) area of responsibility (AOR). These storms – Hurricane Georges and Hurricane Mitch – overwhelmed the affected nations' emergency response capabilities, and provoked substantial international relief efforts. U.S. military forces mounted large-scale responses to these disasters, in conjunction with civilian USG relief agencies, foreign governments, the UN, NGOs, private businesses, and individuals.

² Although this study focuses on the role of U.S. military forces in providing assistance to foreign countries affected by the two storms, both hurricanes also struck the United States. Hurricane Georges caused extensive damage in the U.S. Virgin Islands and Puerto Rico. Hurricane Mitch struck the U.S. Gulf Coast after it devastated Central America.

Before relief and rehabilitation operations were suspended following the two hurricanes, the Commander-in-Chief, U.S. Southern Command (CINCSO) had created two joint task forces (JTFs) for disaster response, re-oriented the mission of a third JTF toward relief efforts, and employed more than 7,000 U.S. military personnel deployed to the Caribbean and Central America. In total, DoD expended more than \$200 million for relief and rehabilitation efforts in response to Hurricanes Georges and Mitch.

These storms and the international relief effort they spawned provide important data for analyzing DoD's capability for responding to natural disasters. The scope and diversity of U.S. military hurricane relief operations in 1998 were substantial. U.S. JTFs operated afloat and ashore; U.S. strategic airlift, helicopter transport, and ships and boats were harnessed to the relief effort; diverse military specialties, from epidemiologists to public affairs officers, were employed; U.S. personnel cleaned wells, delivered food, inoculated children, and built bridges; U.S. military personnel worked alongside local Red Cross employees, Japanese aid workers, and officials of the Pan-American Health Organization (PAHO). Examination of these diverse relief missions, through document review, site visits, and interviews, identified important lessons about the U.S. military's capacity to respond to large-scale natural disasters.³

B. PURPOSE

By examining the DoD response to Hurricanes Georges and Mitch as case studies, this study:

- Assesses the capacity of U.S. DoD to respond to large-scale natural disasters as part of a major international effort

³ An important question IDA examined prior to analyzing the data from these storms is whether lessons identified from massive disasters close to CONUS provided generalizable information on DoD's disaster response capacity. That is, it is important to question whether the two subject storms, and especially a 200-year storm like Hurricane Mitch, were so unique that study findings might not be relevant to most major foreign disaster relief operations. IDA researchers concluded that, although the storms were massive and had unique characteristics, the doctrinal issues, planning processes, command and control arrangements, and dozens of other activities and action steps that composed the USG and DoD response to these catastrophes were the identical components found in most sizeable foreign disaster missions. Although the scale of these storms, especially Mitch, dwarfed most disaster response operations, lessons identified during these 1998 disasters were determined to be generally applicable to large disasters of different magnitudes, of different causations, and in different geographic locations. Moreover, examining a catastrophe of Hurricane Mitch's historical proportions can be seen as a test case of stressing systems and procedures to the maximum extent -- a process that displays flaws and omissions not normally visible in less severe circumstances. When aspects of the Hurricane Georges or Hurricane Mitch operations displayed unique characteristics unlikely to obtain in most foreign emergencies (such as the impact on the USG response of immigration politics), these unique characteristics have been noted in the study as an aid to analysis.

- Identifies areas within DoD that need improvement
- Recommends specific measures to enhance USG response capabilities for future humanitarian assistance operations.

C. SCOPE AND LIMITATIONS

As to subject matter, this study focuses on the response of DoD organizations and units to Hurricanes Georges and Mitch in fall and winter 1998, from the period when Hurricane Georges approached the eastern Caribbean (about 19 September 1998) until the time when DoD Hurricane Mitch rehabilitation efforts in Central America were terminated (22 February 1999).⁴ Although the focus of the analysis is on DoD disaster relief operations, the USG and international response in which the DoD efforts were embedded are also examined.

The study provides basic information on DoD's response to the two storms, including a chronology of key events, missions and deployments. It attempts to provide a basic picture of what occurred during the DoD response, including organizations involved, command and control arrangements, coordination with non-DoD agencies, assessment and requirements determination, deployment/redeployment, missions accomplished, impact on the local populace, and budgetary issues. However, in keeping with the fundamental purpose of the study, this is not a detailed history of the specific SOUTHCOM operations. Rather, in order to identify key findings from these two operations that are applicable to U.S. military forces in all regions, the study focuses on lessons related to DoD's overall readiness to respond and on the general effectiveness of U.S. military operations.

As tasked, IDA examined the Hurricane Georges mission (designated "Operation Full Provider") and the Hurricane Mitch mission (designated "Operation *Fuerte Apoyo*," or "Strong Support") in order to identify areas needing improvement and to recommend specific measures to enhance response capabilities for future humanitarian assistance operations. The study notes Findings and makes Recommendations in 23 categories relevant to DoD disaster response operations. These categories are listed in Table I-1.

⁴ This report does not cover the reconstruction phase of DoD operations in Central America. The reconstruction phase, continuing until September 1999, consisted primarily of Reserve Component training exercises, with humanitarian missions, in affected nations.

Table I-1. Study Categories

<u>Category</u>	<u>Code</u>	<u>Category</u>	<u>Code</u>
• Assessment Issues	AI	• Helicopter Support	HS
• Command and Control	CC	• Information Support	IS
• DoD Internal Coordination	CD	• Legal Affairs	LA
• Interface with Host Nations	CH	• Logistics Support (less transportation and movement control)	LS
• Interagency Operations (USG)	CI	• Transportation and Movement Control	LT
• Communications and Computers	CK	• Medical Support	MS
• Interface with non-USG Organizations and Governments	CN	• Organization and Training	OT
• Doctrine and Procedures	DP	• Public Affairs, including Donations	PA
• Engineering Support	ES	• Personnel Support	PS
• Financial Operations	FO	• Reserve Forces	RF
• Force Protection and Security	FP	• Special Operations Forces	SF
• Humanitarian Operations (non-engineering; non-medical)	HO		

D. METHODOLOGY

A large amount of information is available on DoD's response to the large-scale 1998 hurricanes in SOUTHCOM's AOR, both from primary sources (message traffic, participant interviews) as well as secondary sources such as after-action reports or analysts' writings. In order to process that information, develop substantiated findings, and make recommendations based on the experience of DoD personnel during Hurricanes Mitch and Georges, IDA developed an inductive methodology that consisted of distilling Findings from primary and secondary sources, and using those Findings to drive concrete Recommendations for changes in doctrine or process. This methodology is displayed in Figure I-1.

Data or observations derived from the information sources listed below in section E were captured as "lessons identified" (LIs) – quanta of information, identified in reports on or by participants in the hurricane relief operations, which were relevant to whether or not DoD relief operations were effectively conducted or whether improvements could be made.⁵ As an example, an interviewee noted that USG

⁵ Although most LIs were taken directly from the oral or written observations of participants in these operations, some LIs were "derived" observations. Derived lessons identified were those implied in the interviews or documents reviewed and which were captured by members of the IDA research team based on their own expertise in disaster response operations.

management of “Denton Amendment”⁶ donated relief supplies required extensive U.S. DoD time and energy during the Hurricane Mitch response, and this observation was captured as an “LI.” Lessons identified were captured in one of the 23 topical categories listed above in Table I-1. The observation on the Denton Amendment donations program, for example, was captured in the category “Public Affairs, including Donations.”

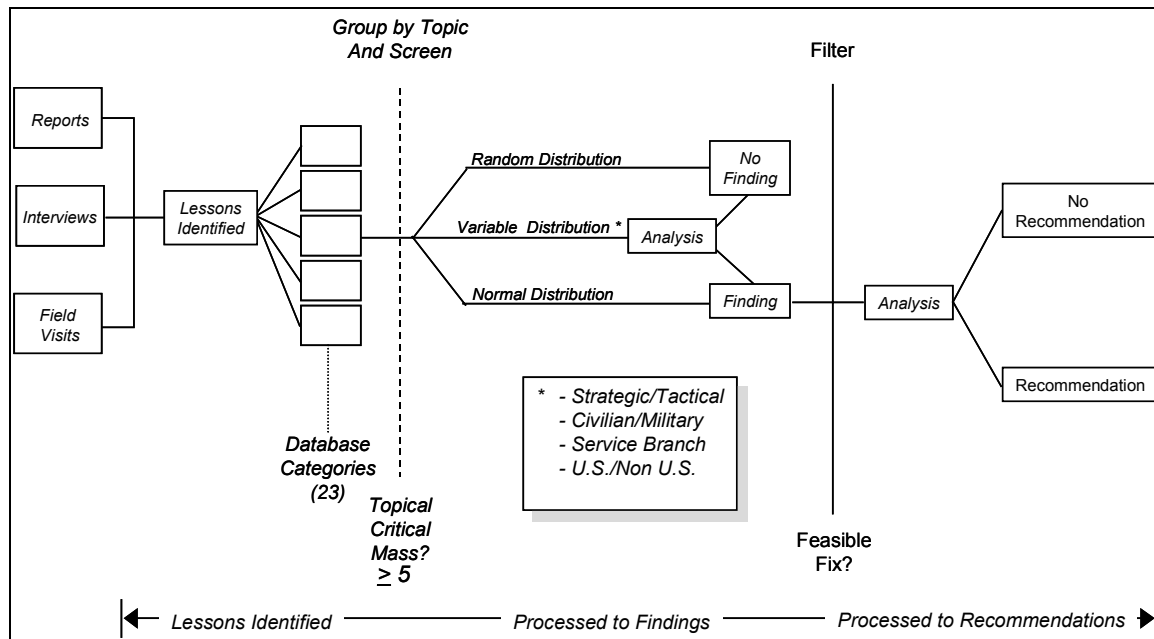


Figure I-1. Analytical Framework

When data or observations were recorded repeatedly (generally, more than five times) as LIs on a particular topic, the set of LIs was examined to determine if reports and/or interviewees’ comments (1) tended to agree as to the nature of the issue (“normal distribution”); (2) showed no discernable pattern as to the nature of the issue (“random distribution”); or, (3) provided conflicting views as to the nature of the issue (“variable distribution”). Using the Denton Amendment example, more than five LIs were captured on this topic; that is, more than five interviewees or reports identified this topic as relevant to the DoD response to Hurricane Mitch.

If all the reports or interviewee comments tended to agree as to the nature of the Denton Amendment issue – if, for illustrative purposes, all data indicated that inadequate federal guidelines undermined Denton Amendment operations – then these results were characterized as a “Finding” about the Denton Amendment program and its effect on

⁶ Additional information on issues relating to the use of the Denton Amendment is included in Finding PA-3 in Appendix B of this study.

DoD disaster relief operations. On the other hand, when a set of reports or data on the Denton Amendment program showed no discernable pattern – for example, when five sources expressed five varying opinions on the Denton donations program – no Finding was established. In a third case, if comments and reports on the Denton program comprised two or more conflicting sets of observations – if half the sources felt the donations program worked well, for example, and half felt it was weak – then IDA analysts examined the sources more closely to determine if a Finding could be established.⁷

In those 69 cases in this study where a Finding was established related to DoD’s capacity to respond to large-scale natural disasters, these Findings were used to identify areas needing improvement and to generate one or more “Recommendations” or specific measures to enhance DoD response capabilities for future humanitarian operations. In order to assess DoD capacity and performance, a filter of seven questions was applied to each Finding. They are:

1. Was the DoD action based on a sound and accurate assessment of conditions at the disaster site?
2. Was the DoD action governed by visible, quantifiable measures of effectiveness (MOEs)?
3. Was the DoD action well coordinated with other USG agencies and international disaster responders, at headquarters and in the AOR?
4. Was the DoD action timely?
5. Was the DoD action effective, based on the needs of disaster victims?
6. Was the DoD action consistent with existing DoD or USG doctrine and procedures?
7. Was the DoD action cost-effective, both in terms of accomplishing the mission at the lowest feasible budget cost and in terms of deploying the assets best aligned with mission requirements?

To reiterate, in keeping with the purpose of this study, the analysis of each Finding was conducted in order to assess DoD’s overall capability to respond to foreign

⁷ Differing views on a particular issue or set of Lessons Identified might be related to characteristics of the sources. IDA analysts examined whether variation might be attributable to whether observers were located at headquarters or in forward locations (“Strategic/Tactical” variation); whether observers were civilian or military personnel (“Civilian/Military” variation); whether observers represented different Service components (“Service Branch” variation); or, whether observers were U.S. or foreign nationals (“U.S./Non-U.S.” variation), among other factors.

natural disasters globally, not to “grade” any element of the DoD performance in Hurricanes Georges and Mitch *per se*. The USG and U.S. military responses in these two case studies were used to generate Findings and Recommendations that might be generally applicable when U.S. military forces are tasked with disaster response missions.

As an example of this process, analysis of observations on the Denton Amendment donations program yielded, following the methodology described above, the following actual Finding:

FINDING: During the Hurricane Mitch response, many organizations sought to use the Denton Program to transport donated supplies to Central America. This caused numerous problems, as the Denton Program is not designed to operate efficiently during a rapid-onset disaster.

One of several Recommendations related to this Finding states:

RECOMMENDATION: The Defense Secretary Cooperation Agency (DSCA), in coordination with the Office of Peacekeeping and Humanitarian Assistance and the Joint Staff, should form an interagency working group with Department of State (DoS) and U.S. Agency for International Development (USAID) to review the management of the Denton Program. The interagency working group should consider designation of one USG agency as manager of private donations during a disaster, seeking Congressional support if necessary to alter legislative language in the Denton Amendment to accomplish that purpose. The designated lead agency would be responsible for Denton policies, plans, operating guidelines, and public information. The head of the lead agency would be responsible for overall quality control of donated goods during a disaster.

Each Recommendation generated by this process met five criteria: (1) the Recommendation evolved from the observations of those personnel involved in the Hurricanes Georges and Mitch responses; (2) the Recommendation addressed a specific Finding identified in the research; (3) the Recommendation is intended to improve the appropriateness, timeliness, or effectiveness of DoD’s response to natural disasters, based on interpretation of established practice in disaster response and DoD doctrine; (4) the Recommendation was addressed to a specific component of the U.S. Department of Defense for action; and, (5) the Recommendation consists of a discrete, concrete, and feasible action item. In most cases, Recommendations for improvement pertain to internal DoD processes or systems. In cases where the problem identified or recommended improvement related to the larger USG interagency system or to the

international disaster response system, the Recommendations encourage DoD to propose reforms in these systems.

E. INFORMATION SOURCES

Information sources for this study included:

- Site visits by IDA analysts to Caribbean and Central American locations that were either affected by the storms, or that served as headquarters for regional disaster response organizations (Barbados, Dominican Republic, Puerto Rico, Costa Rica, El Salvador, Guatemala, Honduras, and Panama)⁸
- Site visits outside the National Capital area to the headquarters of DoD commands and USG or other organizations engaged in the Hurricane Georges or Hurricane Mitch responses (including SOUTHCOM, U.S. Transportation Command (TRANSCOM), National Hurricane Center, U.S. Coast Guard 7th District Headquarters, Metro Dade Urban Search and Rescue Unit, U.S. Joint Forces Command (JFCOM), Military Transportation Management Command's (MTMC's) subordinate Deployment Support Command (DSC), Air Mobility Command's (AMC's) Subordinate Air Mobility Warfare Center (AMWC), and Military Sealift Command (MSC)
- Site visits in the Washington, DC area to commands, agencies, and organizations engaged in disaster relief operations (including Office of the Secretary of Defense (OSD), the Joint Staff, DSCA, Director of Military Support (DOMS), National Guard Bureau, USAID, Office of U.S. Foreign Disaster Assistance (OFDA), FEMA, U.S. Maritime Administration (MARAD), MTMC, National Security Council (NSC), and Department of State (DoS))
- Additional interviews with key DoD and USG participants in the Hurricane Georges and Hurricane Mitch relief efforts (including the Secretary of the Army, the former U.S. Ambassador to Nicaragua, Commander/JTF Aguila, and Commander/JTF Full Provider)⁹
- Meetings with non-USG organizations engaged in disaster response (including PAHO, the UN Office for the Coordination of Humanitarian Affairs (OCHA), the UN Development Program (UNDP), and NGOs)

⁸ IDA analysts attempted to visit Nicaragua, as well, but were unable to obtain country clearance from the U.S. Embassy due to workload considerations.

⁹ The majority of interviews were conducted in person, with several important interviews conducted telephonically.

- Review of Hurricane Georges or Hurricane Mitch after-action reports and studies completed by SOUTHCOM, OFDA, PAHO, the UN, the U.S. Army Peacekeeping Institute (draft), and numerous other U.S. military units and commands¹⁰
- Automated searches of selected databases, such as the Joint Universal Lessons Learned System (JULLS), the Center for Army Lessons Learned (CALL), and the UN database
- Examination of raw data generated during the relief operations, such as cable traffic, memoranda, reports, meeting minutes and related papers.

F. ORGANIZATION OF THE REPORT

This study consists of an Executive Summary, this Introduction, two additional chapters, a reference list, and three Appendices.

Chapter II briefly explains the relief operations related to Hurricanes Georges and Mitch. The storms themselves are described, as are the impacts they caused, respectively, in the Caribbean Basin and in Central America. The report reviews the international humanitarian response to the two crises and the overall USG reaction. The chapter then examines DoD involvement in the relief and rehabilitation efforts, focusing on Hurricane Mitch operations. The chapter provides chronologies of key events from the time Hurricanes Georges and Mitch approached the areas they would strike through the redeployment of U.S. military personnel from the relief efforts. The major elements of the DoD missions are described, including readiness, planning and tasking processes, command and control, major units deployed, categories of assets engaged, coordination, and operations carried out at disaster sites.

Chapter III examines the 69 Findings and 162 Recommendations generated by this report, and critical issue areas. Five issue areas highlighted for DoD attention are:

- The USG interagency response system for large-scale foreign disasters, within which DoD relief operations are embedded, is fundamentally flawed. The USG foreign disaster response system requires fundamental reform, for which the domestic *Federal Response Plan* provides a useful model.
- Modest, well-designed investments in force management prior to a disaster declaration can substantially improve readiness and rapidity of response.

¹⁰ During the research effort, the IDA team made a concerted effort to stay abreast of a parallel, but Army-focused, study of Hurricane Mitch being conducted by the U.S. Army Peacekeeping Institute at Carlisle for the Chief of Staff of the Army.

- The process of translating humanitarian needs encountered during disasters into U.S. military forces and capabilities to meet those needs can be improved.
- DoD's coordination with multiple responding entities can and should be substantially improved, both in the U.S. military's overall approach to disaster response operations and, specifically, at the scene of a foreign disaster.
- Effective, timely response to rapid-onset disasters demands more reliable funding mechanisms, within DoD and within the USG interagency system.

The data, research, and Findings from this study suggest that each of these five issue areas is crucial to the U.S. military's capacity to respond to large-scale natural disasters overseas. Taken together, these five issue areas and related Findings and Recommendations establish a priority work plan for DoD in order to enhance its foreign natural disaster response capabilities.

Appendix A lists the abbreviations and acronyms. Appendix B comprises a substantial part of this report. This appendix lists each of the 69 Findings developed, arranged by topic, and the related Recommendations. For each set of Findings and Recommendations, discussion paragraphs elaborate on the nature of the Finding and the experiences on which the Finding was based. Appendix C is a bibliography listing sources consulted during this study.

CHAPTER II

THE HURRICANES AND THE RESPONSE

II. THE HURRICANES AND THE RESPONSE

This chapter describes Hurricane Georges and Hurricane Mitch and their respective effects on the Caribbean and Central America. The chapter then provides an overview of the international humanitarian response to the storm damage, and the U.S. military portion of that response.

A. THE STORMS AND THE DAMAGE THEY CAUSED

The U.S. National Oceanic and Atmospheric Administration (NOAA) described the 1998 hurricane period as a “mean season” (Ref. 1), and justifiably so. In September and October of that year, the Western Hemisphere was visited by two monstrous storms: Hurricane Georges and Hurricane Mitch. The level of damage inflicted by Georges in the U.S. Virgin Islands, Puerto Rico, and on the U.S. mainland alone cost the federal government and the American Red Cross more than any other hurricane in history (Ref. 2), even before the toll in the other affected Caribbean island nations is counted. Hurricane Mitch, variously described as “the most destructive hurricane in the history of the western hemisphere” (Ref. 3) and the “deadliest Atlantic hurricane since 1780” (Ref. 4), devastated much of Central America.

1. Impact of Hurricane Georges

Hurricane Georges grew from a tropical storm to hurricane strength on 17 September 1998 while in the Atlantic Ocean, reaching the eastern Caribbean island of Antigua early on 21 September.¹ Over the next 12 days, Hurricane Georges followed a west-northwestward course over the Lesser and Greater Antilles, before brushing Key West, Florida and striking the continental United States in Mississippi on the morning of 28 September. It was downgraded to a tropical storm later that day. Between 17 and 28 September, Hurricane Georges made an unusual seven landfalls (Antigua, St. Kitts and Nevis, Puerto Rico, Hispaniola (Dominican Republic and Haiti), Cuba, Key West, and

¹ The description of the storm that follows is based primarily on information provided by the National Hurricane Center (NHC) (Ref. 5), the Office of U.S. Foreign Disaster Assistance (OFDA) (Ref. 6), and The National Oceanic and Atmospheric Administration (NOAA) (Ref. 7).

Mississippi), following a path illustrated in Figure II-1, and caused damage in other Caribbean islands where it did not make landfall.

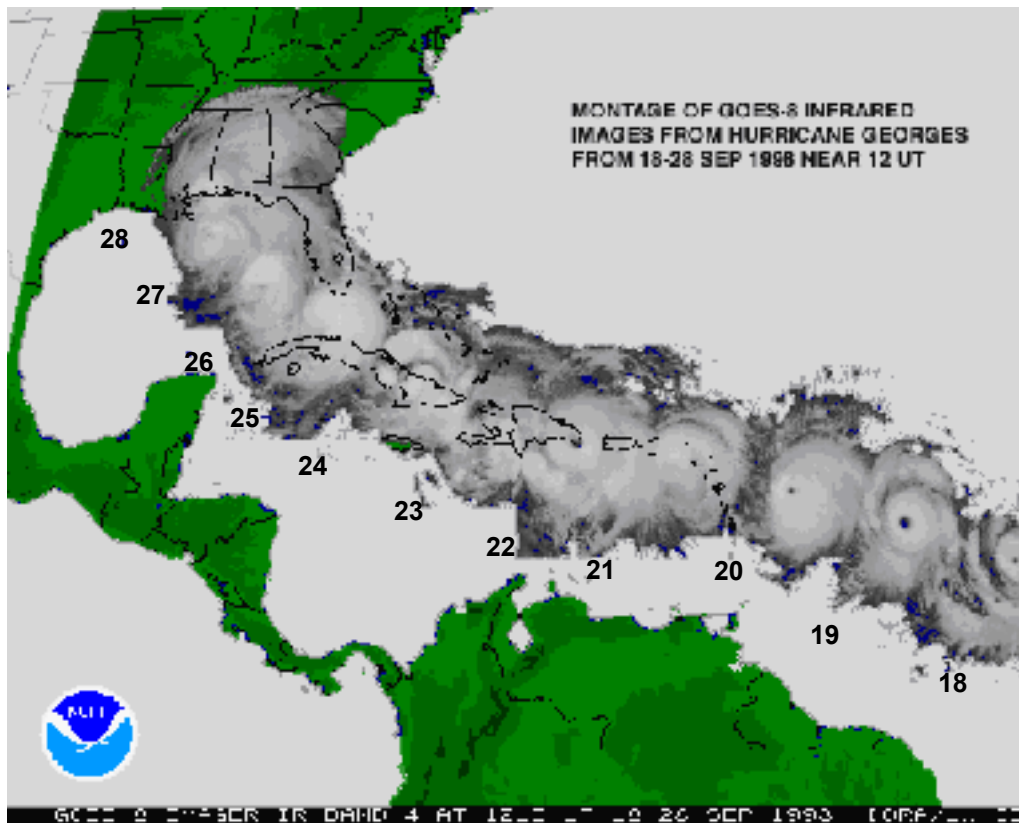


Figure II-1. Track of Hurricane Georges From 18-28 September 1998

Reaching a peak wind speed of 175 miles per hour (mph), or 282 kilometers per hour (kph), Hurricane Georges caused extensive damage along its path. The storm also dumped copious quantities of rain on Puerto Rico (24 inches [61cm] of rainfall measured over 2 days) and on the Dominican Republic and Haiti (estimates of as much as 39 inches [99 cm] over 24 hours), causing severe landslides and flooding in the latter two locations. In addition, Georges caused substantial storm surges in waters from Puerto Rico to Mississippi, and spawned more than two dozen tornados.

These severe meteorological phenomena associated with Georges resulted in substantial deaths and injuries, and widespread property damage. According to NOAA, the 602 deaths caused by Hurricane Georges make it the most deadly storm in the Atlantic basin in the 20th century. Property damage in the U.S. mainland and territories alone approached \$6 billion. The human and infrastructure costs of Hurricane Georges, by country and U.S. location, are summarized in Table II-1.

Table II-1. Hurricane Georges Damage Estimates

LOCATION (in hurricane path sequence)	DEATHS	PROPERTY DAMAGE (U.S. \$ Bn)	STORM EFFECTS
Antigua and Barbuda	2	Not available	Major infrastructure damage to port and buildings, including hospitals and schools; 2,000+ houses destroyed or damaged
St. Kitts and Nevis	4	0.4	3,000 homeless; 85% of all homes damaged; widespread infrastructure damage, including airport tower and terminal
U.S. Virgin Islands	0	0.1	Widespread agriculture damage; some housing damaged
Puerto Rico	0	3.5	33,000 homes destroyed; 50,000 more damaged; power and water loss to 80% of island; massive damage to agriculture
Dominican Republic	380*	>1.0	500 persons missing; 100,000+ homeless; 70% of bridges damaged or destroyed; 90% of commercial crops destroyed
Haiti	209*	>0.175*	60 persons missing; widespread flooding, including flash floods; extensive damage to housing; major damage to agricultural sector
Bahamas	1	Not available	Not available
Cuba	6	Not available	200,000 evacuated; 62,000 homes destroyed, damaged, or flooded; major crop damage
U.S. Mainland	1	2.31	Widespread power outages; severe flooding of homes and businesses; property damage from high winds; damage to housing

SOURCES: NOAA, NHC, and OFDA

* Best estimates received

2. Impact of Hurricane Mitch

Three weeks after Hurricane Georges dissipated, Hurricane Mitch began its destructive odyssey through the Caribbean Sea and Gulf of Mexico.² Mitch strengthened from a tropical depression to a tropical storm on 22 October 1998, while 360 miles south of Jamaica. It became a hurricane on 24 October, and veered westward toward Central America, aimed at Belize. By 26 October, it had become one of the strongest hurricanes on record, with sustained winds of 180 mph (290 kph) and gusts well over 200 mph (322

² The description of the storm that follows is based primarily on information from NOAA (Refs. 4 and 8), OFDA (Ref. 9), and the U.S. Agency for International Development (USAID) (Ref. 10).

kph). On 27 October Hurricane Mitch turned sharply southward toward Honduras, with wind speed and speed of advance weakening as it approached the Central American landmass, and hovered off the coast for several days. It made landfall on 29 October, beginning a southwestward traverse of Honduras to the Salvadoran border, while further weakening, by definition, to a tropical storm on 30 October (wind speed of 69 mph) and a tropical depression on 31 October (wind speed of 35 mph). The storm's path then took it across southern Guatemala, over Mexico's Yucatan Peninsula, back over water in the southern Gulf of Mexico (where it regained strength and was re-designated a tropical storm), and ultimately over southern Florida to the Atlantic Ocean on 6 November. Hurricane Mitch's track is illustrated in Figure II-2.

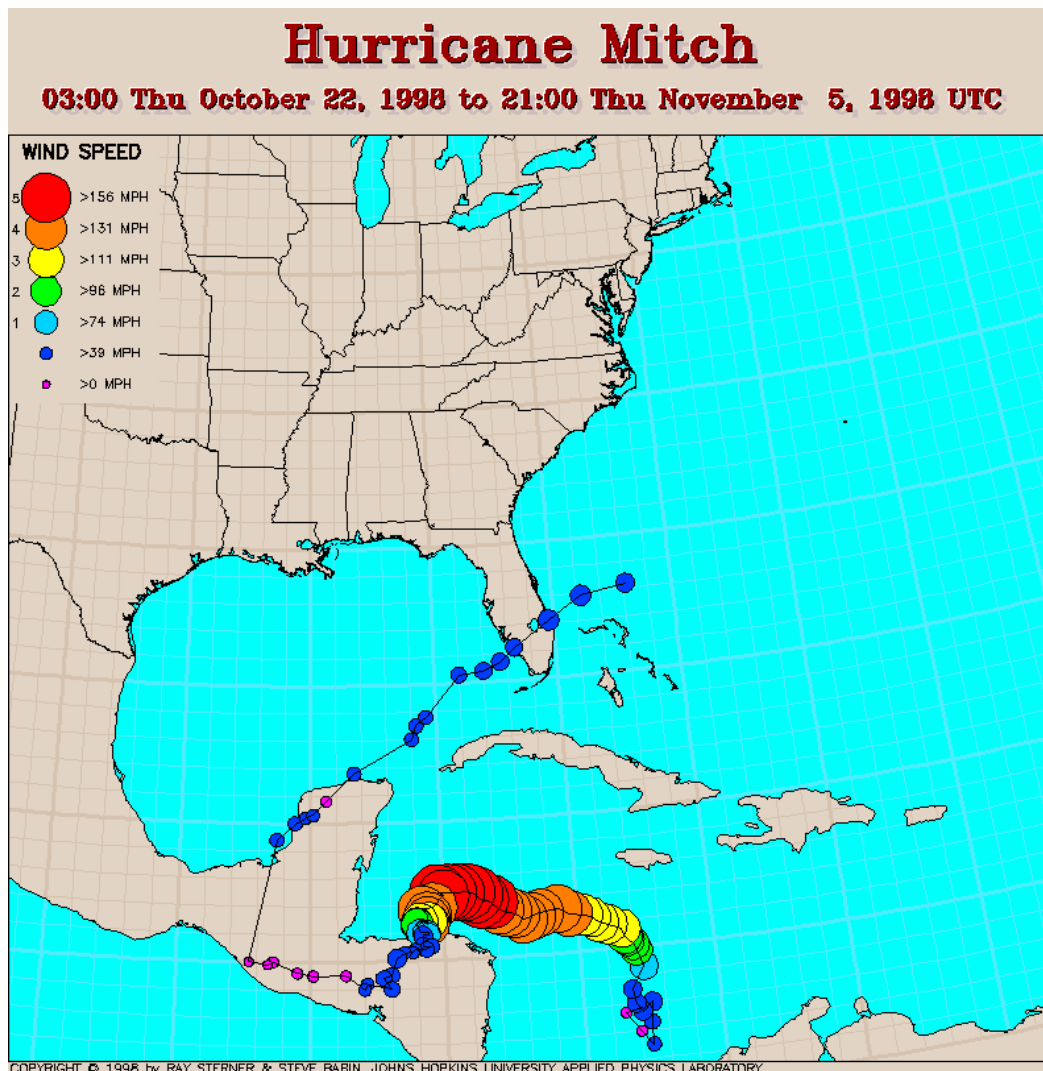


Figure II-2. Hurricane Mitch Storm Track

An extraordinary aspect of Hurricane Mitch's route was the increment traversed between 27 October and 1 November 1998. During this period of 6 days, the storm traveled at approximately 4 knots, covering only about 600 miles in the course of nearly a week. Although some wind damage occurred from the tropical storm and later the tropical depression during this period, the striking meteorological result of the slow passage was massive rainfall over Honduras and adjacent nations. The rainfall was made more severe by east-west mountain ranges in Central America that approach 10,000 feet in height. During this period over the Central American isthmus, Mitch's winds drew water from both the Caribbean Sea and Pacific Ocean. Rainfall of nearly 36 inches (91 cm) during this period was measured in Choluteca, Honduras, and NOAA believes unobserved rainfall might have been even higher. Unconfirmed reports in some areas indicate that as much as 75 inches (191 cm) fell in higher elevations over the course of the storm's passage. This torrential rain unleashed massive floodwaters and mudslides throughout the region, devastating communities and virtually the entire infrastructure of Honduras. Mitch's slow, meandering track during the period 26 October to 1 November is illustrated in Figure II-3. In addition, Mitch-driven waves on the Caribbean coast of Central America may have reached 44 feet (13 meters), according to one model, adding to the destruction. By the time it reached Florida, Hurricane Mitch also helped create at least five tornados.

The winds and precipitation associated with Mitch – especially the downpours during the 6 days when the hurricane (at that point a tropical storm) was virtually stationary over Honduras – created a major disaster for Central Americans. More than 9,000 dead were accounted for, while at least another 9,000 victims are missing from the catastrophe and presumed dead. Cataclysmic damage to transportation infrastructure, the agricultural sector, other economic assets, and buildings caused widespread suffering, setting back national development years, and perhaps decades, in some of the affected countries. The human and material costs of Hurricane Mitch are summarized in Table II-2.

Track of Hurricane Mitch

From October 26 to November 1, 1998



Figure II-3. Track of Hurricane Mitch: 26 October to 1 November 1998

Table II-2. Hurricane Mitch Damage Estimates

LOCATION (in hurricane path sequence)	DEATHS	PROPERTY DAMAGE (U.S. \$ Bn)	STORM EFFECTS
Jamaica	3	Not available	Minor damage
Honduras	5,700 - 6,500	2.0 - 4.0	8,000+ persons missing; 1.4 million homeless; massive infrastructure damage, including 92 bridges destroyed and one third of schools damaged; 90% of export banana crop lost
Nicaragua	2,900 to 3,800	1.3 - 1.5	868,000 citizens affected; 32,000 homes destroyed and 114,000 damaged; massive infrastructure damage, including 33 bridges and 11 health centers destroyed; much of national agricultural production lost; widespread epidemics
Belize	0	Not available	75,000 citizens evacuated; widespread flooding
Costa Rica	7	Not available	Coastal population evacuated; flooding and minor damage
Panama	3	Not available	Minor damage
El Salvador	239	1.0*	55,000 people displaced; substantial infrastructure damage; massive crop and livestock losses
Guatemala	256	1.0*	113,000 people displaced; substantial infrastructure damage, including 32 bridges severely damaged; massive agricultural losses, including 95% of export banana crop
Mexico	9	Not available	Wind and rain damage to property
United States	1	0.04	Wind and rain damage to houses, primarily from storm-related tornados; widespread power outages

* Best estimates received

The tabular data, while imposing, perhaps inadequately convey the scale of the damage inflicted on the relatively small populations of the hardest hit Central American nations. If the population of the United States suffered a disaster on the same scale as the population of Honduras, Hurricane Mitch would have killed 250,000 Americans and forced one out of every four U.S. citizens from their homes. Even in the countries sustaining more moderate damage, like El Salvador, the number of deaths compared to the national population equates to 11,000 U.S. fatalities and 2.5 million Americans forced to seek temporary shelter.

B. THE INTERNATIONAL HUMANITARIAN RESPONSE

This section summarizes the international humanitarian response to Hurricanes Georges and Mitch, including USG civilian programs, during the relief and rehabilitation portions of the operations.³ The text briefly describes the participants, modalities and scale of the international response, with the purpose of providing context for understanding how DoD humanitarian missions interrelated with the overall relief effort. This section devotes relatively more detail to the international community's response to Hurricane Mitch, by far the larger and more multi-faceted humanitarian undertaking. In general, only those aspects of the Hurricane Georges response that were unique, or contain important insights for future DoD operations, are discussed in the text. This section also includes a chronology of key storm-related events between September 1998 and February 1999.

1. Response to Georges

a. International Response

Although the humanitarian response to Hurricane Georges paled in comparison with what the USG and international community would attempt *vis-à-vis* Mitch just a month later, the Georges relief response was, in itself, substantial. In terms of numbers of contributors, a long list of donors – nations, regional organizations, international organizations, NGOs, and private companies and individuals – from within and outside the region provided money, materiel, skilled staff, or transport assets to the affected countries or territories. An illustrative list of contributors is included in Table II-3 (Refs. 12-14).

³ Numerous relief officials, within and outside the affected nations, noted that the two hurricanes, especially Hurricane Mitch, would require years of reconstruction work to repair the damage to national infrastructure and the national economies. Much of the funding provided by international donors in response to the damage caused by the storms was targeted to this long-term rebuilding or “development” effort, including such contributions as foreign debt forgiveness and long-term loans. For example, the Inter-American Development Bank (IADB) announced a 4-year, \$3 billion financing package for Central America reconstruction 6 months after Hurricane Mitch departed (Ref. 11). The international response summarized in this section covers solely the early relief and rehabilitation portions of the international response, those portions intended to save lives and restore basic services in the affected countries.

Table II-3. Nations and Organizations Providing Hurricane Georges Relief⁴

Regional Govts.	Regional Organizations	For-profit Sector	NGOs	UN and International Organizations	Donor Govts.
Barbados	Caribbean Development Bank (CDB)	Barbados Bottling Company	Adventist Development and Relief Agency (ADRA)	International Federation of Red Cross and Red Crescent Societies (IFRC)	Canada
Grenada	Caribbean Disaster Emergency Response Agency (CDERA)	Barbados Flour Mills	CARE	Pan-American Health Organization (PAHO)	France
Guyana	Caribbean Disaster Relief Unit (CDRU)	Caribbean Metals	Catholic Relief Services (CRS)	UN Food and Agriculture Organization (FAO)	Greece
Jamaica	Eastern Caribbean Donor Group for Disaster Management	Caribbean Electric Utility Services Corporation (CARILEC)	Church World Services (CWS)	UNICEF	Taiwan
Montserrat	Organization of Eastern Caribbean States (OECS)	IBM	Doctors Without Borders – USA	World Bank	United Kingdom
Saint Lucia		West India Biscuit Company, Ltd. (WIBISCO)	Food for the Hungry International (FHI)	European Community Humanitarian Office (ECHO)	United States
St. Vincent and the Grenadines			Lutheran World Relief (LWR)		
Trinidad and Tobago			Medical Assistance Programs International (MAP)		
Turks and Caicos Islands			World Vision (WV)		

⁴ Table II-3 provides an indicative rather than comprehensive list of contributors to the Hurricane Georges relief effort.

The total value of the international relief provided in the immediate aftermath of Hurricane Georges – not counting the long-term reconstruction assistance that would follow, or the USG domestic assistance to Puerto Rico – exceeded \$45 million. More than half of this aid – nearly \$30 million – went to the nation suffering the worst storm damage, the Dominican Republic. The USG, with foreign relief expenditures of approximately \$40 million, was the largest single contributor of relief assistance in the Caribbean, with the European Community Humanitarian Office (ECHO), France, Taiwan, and the United Kingdom making major donations (Ref. 12, Ref. 15).⁵

The international response to Hurricane Georges, while substantial, was also highly diverse. Because the storm struck or affected so many nations and territories, including several of the smaller island nations of the eastern Caribbean, and because the level of damage varied among these islands, the intensity and form of the international relief effort also varied. In the eastern Caribbean, regional organizations like the Caribbean Disaster Emergency Response Agency (CDERA) and the Caribbean Disaster Relief Unit (CDRU) – a combined unit composed of eastern Caribbean military and police forces – were prominent in the response. Also, Western naval forces – the West Indies Guard (WIG) ships of France, the Netherlands and the United Kingdom, which regularly patrol the waters surrounding their territories in the region and adjacent areas – contributed very rapid and useful relief missions (Ref. 16). The scope of relief contributions from major Western nations also appeared to vary based on diplomatic considerations, as nations such as the Dominican Republic garnered relatively more support than did Cuba or, somewhat inexplicably, Haiti.⁶

b. USG Response to Georges

Government-wide, the U.S. federal disaster response to Hurricane Georges concentrated overwhelmingly on the severe damage caused in Puerto Rico. Although that particular domestic operation, managed by the Federal Emergency Management Agency (FEMA), lies largely outside the scope of this study, it is worth noting that

⁵ Official documentation of relief expenditures for Hurricane Georges is generally weak. The relative absence of documentation may be attributable to the arrival of Hurricane Mitch on the heels of the first storm. It is likely that organizations like OFDA and OCHA, which would normally have been chronicling Hurricane Georges at the termination of that relief effort, were fully engaged in responding to Hurricane Mitch in the fall of 1998.

⁶ USG and international relief officials interviewed for this study were aware of the relatively limited international response in Haiti, but were unable to explain it. A form of “donor fatigue,” related to the long and expensive international peacekeeping mission in Haiti, may have contributed to the relatively limited disaster response mission in that nation.

FEMA expended more than \$1.5 billion on domestic recovery operations related to Hurricane Georges, much of that sum in Puerto Rico (Ref. 17). That figure substantially exceeds total USG international relief expenditures for Hurricanes Georges and Mitch combined. USG foreign relief contributions were made to the eastern Caribbean, the Dominican Republic, and Haiti. USG-sponsored emergency assistance consisted of assessment teams, food aid, shelter supplies, related emergency materiel (such as water containers and blankets), and support for helicopter delivery of relief, the latter provided by U.S. military aircraft (Ref. 6, Ref. 18).

In terms of how the interagency managed the response to Hurricane Georges, the USG effort was bifurcated between domestic and international procedures. The process established in the *Federal Response Plan* (FRP) (Ref. 19) guided the management of the domestic response, both within the continental United States (CONUS) and outside the continental United States (OCONUS) in the Commonwealth of Puerto Rico and the U.S. Virgin Islands (USVI). Once the President declared a disaster for affected states or territories, FEMA managed the overall response through the deployment of Federal Coordinating Officers (FCOs) and Emergency Response Teams (ERTs). FEMA officials drew upon military support through the designated Defense Coordinating Officer (DCO) and incorporated the expertise of other federal agencies based on their respective responsibilities for “emergency support functions” identified in the FRP.

The response to Hurricane Georges’ impact on areas outside the United States generally followed the established USG civilian agency pattern for international disasters. Once the U.S. ambassador in an affected country issued a disaster declaration, OFDA provided a limited cash grant to the U.S. Embassy,⁷ then dispatched an assessment team to evaluate storm damage and humanitarian requirements. Based on the recommendations of those assessment teams, combined with assessment data from U.S. embassies, the UN, and other generally reliable sources, a number of USG agencies made contributions to the relief program. After Georges, OFDA, USAID’s Food for Peace Office (FFP), the U.S. Department of Agriculture (USDA), and local USAID offices in the affected nations provided relief funding, either directly to national governments or through NGOs or regional organizations (e.g., PAHO and CDERA).

⁷ OFDA standard operating procedure makes available an immediate cash grant, usually in the amount of \$25,000, to the U.S. Ambassador issuing a disaster declaration. This process allows the U.S. Embassy to make an immediate contribution to relief programs in the affected nation, usually through an indigenous organization.

The USG management structure for the Hurricane Georges response, focusing on the process for generating assistance from U.S. military forces, is outlined in Figure II-4.

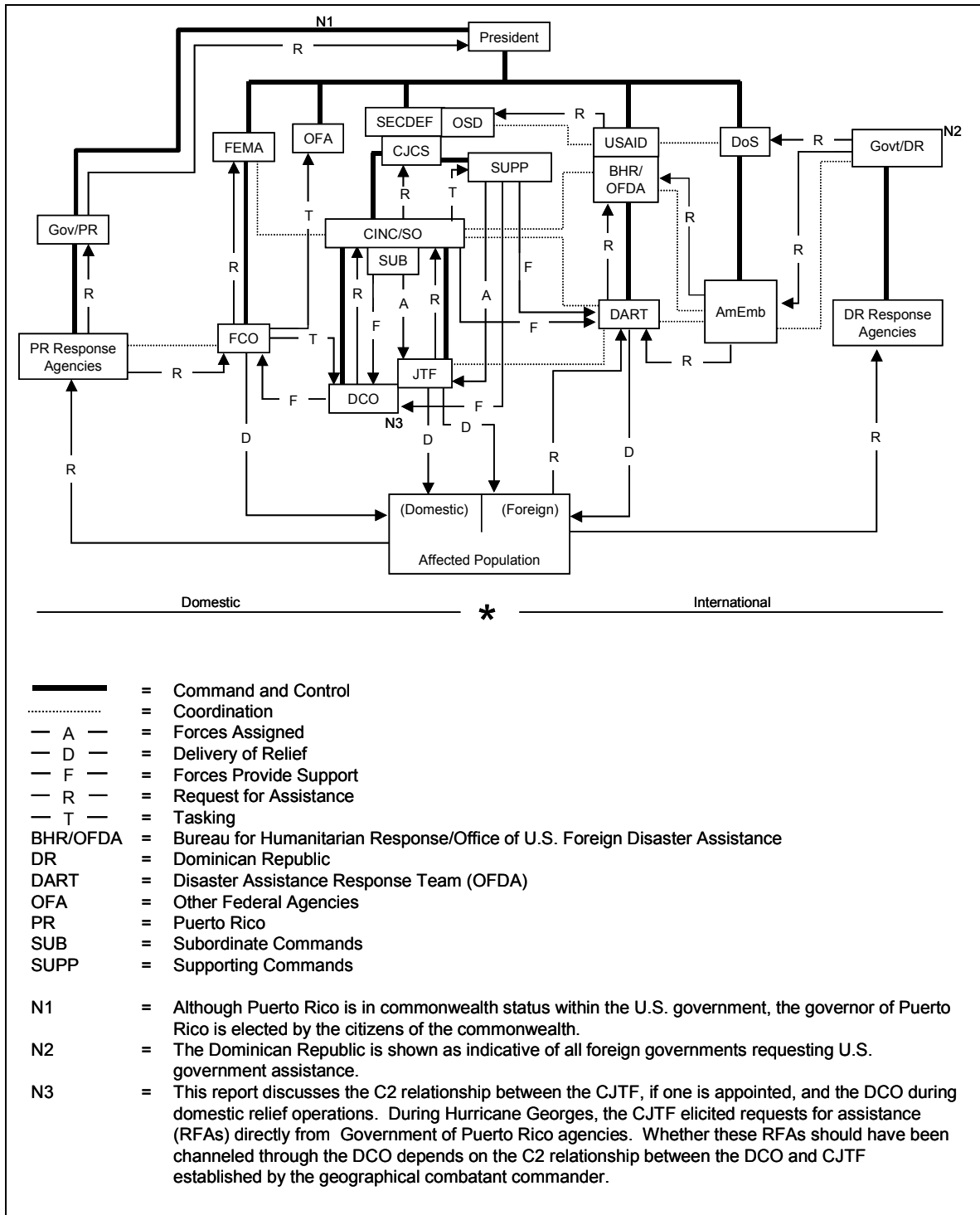


Figure II-4. Concept of Operations Generating U.S. Military Relief Assistance – Hurricane Georges

Key events during the international and USG response to Hurricane Georges are noted in Table II-4.

Table II-4. Chronology of Key Events During Hurricane Georges

Date	Event
17 Sept	Reached hurricane strength in the Atlantic Ocean
19 Sept	Georges declared Category 3 hurricane with wind in excess of 110 mph; projected to strike PR and USVI; Logistics Readiness Center (LRC) at SOUTHCOM started tracking storm; DCOs and DCEs deployed to USVI and PR
19 Sept- 28 Oct	SOUTHCOM provided domestic disaster relief support to Puerto Rico and US Virgin Islands in support of FEMA and foreign disaster relief in support of OFDA. OFDA support included St Kitts, Antigua, Haiti, and Dominican Republic; Government of Cuba refused any relief support from US; Guantanamo received little to no damage
20 Sept	Georges made landfall in Antigua
20 Sept	Made landfall in Dominica, Monserratt, Barbuda, St. Kitts, and Anguilla (sustained winds of 115 mph with gusts to 150 mph)
21 Sept	Made landfall in Puerto Rico (sustained winds of 115 mph); significant damage to Naval Station Roosevelt Roads (NSRR)
21 Sept	President declared disaster for Puerto Rico
21 Sept	SOUTHCOM Crisis Action Center (CAC) activated
22 Sept	Made landfall in Dominican Republic (sustained winds of 120 mph)
22 Sept	Passed over Haiti
23 Sept	Made landfall in Eastern Cuba (sustained winds 75 mph)
23 Sept	U.S. Ambassadors in St. Kitts/Nevis, Antigua/Barbuda, Dominican Republic and Haiti all declared disasters
25 Sept	Made landfall in Key West (sustained winds 105 mph); threat to SOUTHCOM HQ caused activation of alternate command post and LRC at Davis Monthan Air Force Base; non-essential personnel were evacuated and key CC personnel were locked down in a 36-hour shift.
28 Sept	Made landfall in Biloxi as Category 2 Hurricane
27 Sept	CJTF and initial elements of JTF Full Provider arrived at Naval Station Roosevelt Roads (NSRR)
29 Sept	Downgraded to tropical depression north of Mobile
29 Sept	First Lady and CODEL tour affected areas, including PR, DR, Haiti
1 Oct	USNS Algol arrived at Morehead City, NC for loading
1-3 Oct	Three C5s and one C17 deliver engineering equipment and personnel to NSRR from Cherry Point, NC
3 Oct	USS Bataan embarked JTF and departed CONUS

Table II-4. Chronology of Key Events During Hurricane Georges (cont'd)

Date	Event
3 Oct	First medium girder bridge (MGB) emplaced at Penuelas, PR
6 Oct	Second MGB emplaced at Utuado, PR
5-6 Oct	USNS Algol discharged cargo at NSRR
7 Oct	USS Bataan arrived NSRR with Disaster Relief JTF (DRJTF) Full Provider, including elements of 2d FSSG
9 Oct	USS Bataan loads reconfigured for sea-based logistics
10-21 Oct	USS Bataan served as a mobile base to provide support ashore
11 Oct	FEMA started shift from response to recovery/mitigation, and DoD began to be replaced by other federal agencies and civilian contractors; LRC returns to normal shift operation
13 Oct	JTF Full Provider initiated relief projects at San Sebastian, Lares, Maricao, Las Marias, Cabo Rojo, and Sabana Grande, PR
21 Oct	Response shifted to routine recovery and JTF redeployed
25 Oct	USS Bataan departed NSRR
27 Oct	DCO/DCE completed duties in support of FEMA

2. Response to Mitch

a. International Response

The international relief effort following Hurricane Mitch was large and complex. In terms of which nations and organizations participated in the disaster relief mission, it is fair to say that virtually the entire worldwide humanitarian community contributed to the response. All major UN operational agencies, such as the United Nations Children's Fund (UNICEF), UN High Commissioner for Refugees (UNHCR), and the World Food Programme (WFP), were offering relief aid by early November 1998. More than 30 countries offered bilateral assistance to one or more of the stricken Central American nations. International organizations that normally respond to disasters, such as the IFRC and PAHO, were joined by the Organization of Petroleum Exporting Countries (OPEC) and other non-traditional donors in contributing to the relief effort (Ref. 18). Hundreds of NGOs, including local groups and international agencies, joined the disaster response. The American NGO consortium InterAction reported that 44 member NGOs were accepting contributions for Hurricane Mitch assistance by November (Ref. 20). And nations within the region – even some of the nations affected by the storm – sent aid to neighboring countries. Among regional states, Mexico, Panama, El Salvador and Cuba – the latter still recovering from Hurricane Georges damage – provided assets, among others.

The resources provided by this array of contributors were sizeable. The UN recorded contributions from all sources of \$403 million by 1 December 1998 (Ref. 21). Although this figure provides an order of magnitude estimate of the international relief response to the Hurricane Mitch disaster, it is likely to under-represent the amount actually contributed. The UN made no attempt to collect data on contributions in-kind, nor is it certain that all contributions were reported to the UN data collection system. Of this amount, the largest percentage went to Honduras, the nation most severely affected by Hurricane Mitch, with Nicaragua, El Salvador and Guatemala receiving substantial aid. As was the case after Hurricane Georges, the USG was the largest single donor to the relief effort. On 4 December 1998, the USG announced that its emergency relief to Central America totaled \$263 million (Ref. 22). Other major contributors included ECHO and the governments of Belgium, Canada, France, Germany, Italy, the Netherlands, and Spain (Ref. 18).

In addition to being large, the international humanitarian response to Hurricane Mitch was complex in several aspects that were relevant, ultimately, to the nature of DoD's response. Among the complex elements of the Hurricane Mitch relief effort were:

- The unusual storm track and intensity, and subsequent hesitant assessment
- The widespread infrastructure damage, which elevated the requirement for search and rescue and hindered overland relief delivery
- A legacy of recent armed conflict in the affected region complicated relief politics and potentially increased risk to relief workers
- Uncertain roles for host nation disaster management agencies and for international coordination mechanisms on the ground
- The region-wide impact of the storm, which cut across national boundaries and added to coordination issues, and
- Intense media and public interest in the hurricane and its victims, which generated an outpouring of private contributions and spurred competition among donors.

1) The unusual storm track and intensity, and subsequent hesitant assessment

As illustrated in Figure II-2, Hurricane Mitch, immediately before striking the Honduran coast, was characterized by extraordinarily high winds and a westerly track heading toward Belize. When, on 27 to 28 October, the storm simultaneously turned south and weakened, first to a tropical storm, then to a tropical depression, forecasters and pre-positioned disaster response teams were taken by surprise. The decrease in wind

speed led disaster response agencies to reduce their damage estimates. The widespread damage that would result from cumulative rainfall over several days was not immediately apparent to U.S. embassies and other USG communications nodes in the AOR. The scope of the catastrophe became apparent only over the course of several days, and then in fragmentary reports.

2) The widespread infrastructure damage, which elevated the requirement for search and rescue and hindered overland relief delivery

Data on damage caused by the storm presented in Table II-2, especially those data related to bridge and highway damage, illustrate the crushing blow Hurricane Mitch delivered to the transportation networks in affected Central American nations. Widespread destruction severely limited access to stranded storm victims, and curtailed dramatically the ability of relief agencies to truck relief supplies to those populations they could reach.

3) A legacy of recent armed conflict in the affected region complicated relief politics and potentially increased risk to relief workers

Within the region, Guatemala, El Salvador, and Nicaragua had all witnessed internal armed conflict within the past decade, while Honduras faced severe internal political divisions that had not flared into civil war. Host government officials, and international relief workers, often encountered allegations that relief priorities were being shaped by whether a hurricane-affected area had supported the government or opposition forces. In Nicaragua, where the USG had actively supported counter-government rebels during the Sandinista-Contra struggle, Sandinista officials and politicians questioned whether any USG assistance should be welcomed. Finally, widespread internal warfare in Central America had left a legacy of minefields, some marked and others hidden. Landmines and other unexploded ordnance left by combatants in Central America, estimated to number 80,000 mines (Ref. 23), were relocated by flood waters, raising the specter of traumatic injury for both storm victims and relief workers.

4) Uncertain roles for host nation disaster management agencies and for international coordination mechanisms on the ground

Prior to the hurricane, each of the Mitch-affected nations had in place a government disaster response system, ostensibly managed by a designated government agency. However, the magnitude of the tempest overwhelmed these emergency management agencies, which were often short-staffed and under-funded to begin with.

National leaders, facing unprecedented emergencies, complicated the host nation management system by overruling established disaster response systems and appointing *ad hoc* emergency committees or other untested mechanisms. For international organizations responding to the hurricane, coordination with the governments of affected countries became complex and communication became problematic. In the capitals of disaster stricken countries, it was not unusual to find multiple humanitarian coordination centers, each with a collection of international relief agencies, foreign governments and/or NGOs represented.

5) The region-wide impact of the storm, which cut across national boundaries and added to coordination issues

International relief coordination structures were often designed to manage a single emergency in a single nation. Because Hurricane Mitch was a region-wide disaster striking multiple countries, donor nations and international agencies alike sometimes struggled with inter-country relief priorities and regional resource allocation issues. Nations affected by the hurricane competed for attention and resources. International donor agencies wrestled with questions of how to manage communications nets and logistics systems in order to reach affected populations in multiple countries.

6) Intense media and public interest in the hurricane and its victims, which generated an outpouring of private contributions and spurred competition among donors

Because the affected region was relatively accessible to North American reporters, and since many U.S. citizens had relatives in Central America, the U.S. media coverage of Hurricane Mitch was extensive, detailed, and sustained. Intense media and public interest impelled the attention of public figures, including USG officials from the Congress and the executive branch, and spurred an outpouring of private contributions, both cash and donated goods.⁸ Agencies responding to the disaster were required to invest time and energy in media relations, management of VIP visits, and transport and distribution of donated commodities, including commodities of marginal value to hurricane victims. To a degree, media coverage of the relief efforts of other governments – especially controversial governments like Cuba – contributed to pressure for a larger,

⁸ As of May 1999, the U.S. Agency for International Development estimated private donations of at least \$28 million had been contributed by the American public for Hurricane Mitch victims (Ref. 23).

speedier USG relief effort. In addition, relief managers on the ground in the stricken region were required to respond to intense interest by local media.⁹

b. USG Response to Mitch

The USG relief and rehabilitation efforts following Hurricane Mitch were large and multifaceted.¹⁰ In addition to DoD efforts, USG relief and rehabilitation programs in the wake of Hurricane Mitch included food assistance (the largest single relief commodity, reaching \$115 million by Christmas 1998), provision of blankets and shelter materials, water system repairs, and health and sanitation programs to prevent the outbreak of epidemic diseases. The USG funded assessment teams, deployed Disaster Assistance Response Teams (DARTs) to the region, provided airlift to Central America, funded U.S. military helicopter transport within affected areas, and financially supported many local relief efforts of host governments, regional organizations like PAHO, and NGOs (Refs. 9 and 27).

Much of this immediate post-crisis USG assistance (approximately \$85 million) flowed through the component organizations of the U.S. Agency for International Development (USAID), the USG foreign aid agency, especially through USAID's OFDA and its Food for Peace Office. Outside USAID, the U.S. Department of Agriculture (USDA) also contributed agricultural commodities valued in excess of \$60 million (Ref. 9). The U.S. Department of State (DoS), or more specifically its embassies in affected nations, contributed to the assessment of the storm damage, coordination with host governments, and liaison with relief organizations. In addition, DoS provided political policy guidance from its Washington headquarters.

USG interagency coordination was managed through several *ad hoc* mechanisms in Washington and among operational USG agencies in Central America. In Washington, core mechanisms included a National Security Council (NSC)-sponsored task force and a separate DoS coordinating committee. The NSC task force gathered

⁹ It should be noted that not all relief managers viewed local public affairs responsibilities as a burden. Several U.S. military commanders interviewed for this study noted that good relations with media and other opinion leaders in the AO facilitated operations and enhanced force protection (Refs. 24 and 25).

¹⁰ USG relief and rehabilitation efforts described here encompass short-term lifesaving assistance, or "relief," as well as "rehabilitation," defined by OFDA as "short-term recovery of basic services and initiation of repair of physical, social and economic damages." Not included in this analysis are "reconstruction" programs, which OFDA defines as "medium- and long-term repair of physical, social, and economic damage to a condition or level of development equal to or better than before the disaster." (Ref. 26)

representatives from key federal agencies for daily meetings to establish an overall concept of operations, report on individual agency accomplishments, convey White House guidance and, ostensibly, to set USG operational priorities. Interviews with participants in or close observers of these meetings suggest that many participants did not find the *ad hoc* USG coordination mechanisms sufficient for a disaster response operation as complex as Hurricane Mitch (Refs. 28-37). For USG agencies conducting operations within the theater, coordination among DoS, USAID, OFDA, and DoD was accomplished through meetings at U.S. embassies, informal consultations, telephonic communications, and the exchange of liaison officers, especially between DoD (both at SOUTHCOM headquarters and at JTF headquarters) and OFDA's regional office in Costa Rica. The USG management structure for the Hurricane Mitch response, focusing on the process for generating assistance from U.S. military forces, is outlined in Figure II-5.

Figure II-5. Concept of Operations Generating U.S. Military Relief Operations – Hurricane Mitch

Key events in the international and USG response to Hurricane Mitch are noted in Table II-5.

Table II-5. Chronology of Key Events During Hurricane Mitch

Date	Event
24 Oct	Mitch reached hurricane strength in the Caribbean Sea
26 Oct	Mitch reached Category 5 status (sustained winds of 180 mph) near Swan Island, Honduras
26 Oct	SOUTHCOM LRC began 24-hour operations based on threat from Hurricane Mitch
27 Oct	Mitch began drenching Central America with rainfall, which continued for a week
27 Oct	U.S. Ambassador to Honduras declared a disaster for that nation
27 Oct	OFDA Disaster Assistance Response Team (DART) established; relief activities begun; OFDA teams deployed to Honduras (27 Oct), Nicaragua (29 Oct), and Guatemala (27 Oct)
28 Oct	On oral orders from SOUTHCOM, 24 th WG (Howard AFB, Panama) sent expeditionary operations group to assist JTB Bravo at Soto Cano Air Base, Honduras
29 Oct	Hurricane Mitch made landfall in Central America; all airfields in northern Honduras reported under water
29 Oct	U.S. Ambassador to Nicaragua declared a disaster for that nation
29 Oct	U.S. Charge d' Affaires to Belize declared a disaster for that nation
30 Oct	USCINCSO issued a warning order for possible emergency relief operations in response to Hurricane Mitch
31 Oct	U.S. Ambassador to Guatemala declared a disaster for that nation
31 Oct	First airlift carrying OFDA relief supplies to Honduras landed at La Ceiba
31 Oct	The President of Honduras, on an assessment mission to northern Honduras, was rescued from rising flood waters by U.S. forces. Other SAR missions underway from Soto Cano
1 Nov	JTF Bravo ordered to establish Intermediate Staging Base at Soto Cano Air Base
1 Nov	U.S. Ambassador to El Salvador declared a disaster for that nation
1 Nov	First OFDA-funded survey and assessment flights completed from Soto Cano, as weather cleared
1 Nov	First SAR flights by Panama-based U.S. Army aircraft, and first air-dropped relief deliveries from Soto Cano to Honduran victims
2 Nov	U.S. military aircraft delivered supplies to Nicaragua
4 Nov	Mexican disaster relief force received extensive media coverage as they arrived in Tegucigalpa, joining Canadian, British, Dutch, French, and other foreign governments providing assistance

Table II-5. Chronology of Key Events During Hurricane Mitch (cont'd)

Date	Event
4 Nov	First airlift carrying OFDA relief supplies to Nicaragua arrived in Managua; first OFDA airlift to Guatemala arrived in Guatemala City
5 Nov	Following a request from USCINCSO, CJCS issued deployment order to conduct disaster relief operations in Central America
5 Nov	Requests to USG agencies for Denton flights of donated commodities increased by this date
6 Nov	President Clinton approved \$30 million drawdown authority (Presidential Determination 99-03), and other assistance to Hurricane Mitch victims
6 Nov	Former President Bush visited affected areas of Honduras, beginning series of high visibility visits that includes Mrs. Gore, the First Lady, and a Congressional delegation within the next ten days. Leaders of France and Spain also arrived to show support.
7 Nov	CINCSO completed his personal assessment of the crisis
7 Nov	SOUTHCOM Crisis Action Team (CAT) activated
8 Nov	Strategic airlift of relief supplies, from DoD and numerous other sources in full swing by this period; DIRMOBFOR arrived at Soto Cano to direct AMC assets
10 Nov	Joint Forces Air Component Commander (JFACC) Forward established by USSOUTHAF
10 Nov	U.S. Army helicopters began relief operations in Guatemala
13 Nov	Commander, JTF Aguila deployed to El Salvador and established Joint Operations Center (JOC). SOUTHCOM DJTFAC deployed to Comalapa Air Base, El Salvador
15 Nov	Official date for activation of JTF Aguila
18 Nov	By this date, many roads and bypasses had received repairs or workarounds; large portion of relief supplies in Central America moving by truck
18 Nov	DoD terminated OHDACA projects in preparation for transferring funds to Mitch operations
22 Nov	USAF Tactical Airlift Control Element (TALCE) arrived at Comalapa Air Base to support airlift of relief supplies into region
23 Nov	U.S. Army Corps of Engineers completed preliminary damage assessment report, outlining infrastructure damage and cost estimates for reconstruction
25 Nov	U.S. Army helicopters began relief operations in El Salvador
28 Nov	Beginning of SOUTHCOM-designated "Rehabilitation Phase" of Hurricane Mitch operations
28 Nov	JTF Aguila officially took control of relief operations in its AOR from JTF Bravo
9 Dec	Task Force Guatemala began operations on rehabilitation projects in Guatemala
10 Dec	Inter-American Development Bank (IADB) sponsored meeting of Consultative Group for the Reconstruction and Transformation of Central America, attended by most major international donors; meeting continued transition from relief to long-term reconstruction in Mitch-affected region

Table II-5. Chronology of Key Events During Hurricane Mitch (cont'd)

Date	Event
12 Dec	OFDA DART staff, which originally numbered 35 in the four most affected countries, 95% redeployed by this time
15 Dec	Task Force El Salvador began humanitarian projects in that country
19 Dec	Task Force Nicaragua began operations on rehabilitation projects in Nicaragua
8 Jan	Task Force El Salvador completed its planned projects
15 Jan	Task Force Guatemala completed its planned projects
10 Feb	Task Force Nicaragua completed its planned projects
23 Feb	With operational control transferred to JTF Bravo, last elements of JTF Aguila departed region
26 Feb	End of SOUTHCOM-designated "Rehabilitation Phase" of Hurricane Mitch operations
26 Feb	SOUTHCOM CAT deactivated

Sources: Twelfth Air Force, Air Combat Command; Center for Law and Military Operations (CLMO); OFDA; SOUTHCOM; GAO; Office of Peacekeeping and Humanitarian Assistance

C. THE DEPARTMENT OF DEFENSE HUMANITARIAN RESPONSE

U.S. military forces provided significant assistance to victims of Hurricane Georges and Hurricane Mitch. However, DoD operations after the two storms differed significantly in scope, structure, and duration, as well as in how military units interacted with civilian disaster agencies. This section briefly summarizes the U.S. military response to Hurricane Georges, then describes in more detail the Hurricane Mitch response, in five categories:

- Primary locations where DoD forces assisted
- The scope and nature of DoD operations, including main assets employed
- Command and control architecture
- The duration of the response
- Financial resources and coordination factors.

1. Georges Response

For U.S. military forces, Hurricane Georges operations incorporated both standard disaster response modalities and singularly complex aspects. Day-to-day U.S. military operations following the Caribbean hurricane – although naturally demanding and somewhat turbulent, like all responses to large-scale, rapid-onset disasters – followed generally established patterns. U.S. forces provided support as requested by FEMA in U.S. portions of the SOUTHCOM area of operations (AO) according to the dictates of

the U.S. Federal Response Plan, and elsewhere provided support to OFDA, in response to requests from that agency, on foreign soil. As is typical following a natural disaster, the single most widely employed U.S. military asset was air transport, both strategic lift to the theater and air support (including helicopters) for distribution within the theater. In these elements, the DoD mission following Hurricane Georges was generally straightforward and traditional.

On the other hand, Hurricane Georges's path over both U.S. and non-U.S. islands required DoD to manage simultaneously domestic and foreign disaster response operations, interacting with two substantially different legal and organizational arrangements. Adding to the complexity of the DoD Hurricane Georges mission was the decision by the regional combatant commander to deploy a joint task force (JTF) with both domestic and international responsibilities, and to maintain that JTF afloat. Moreover, Hurricane Georges struck the Caribbean soon after SOUTHCOM had inherited responsibility for that region from then-Atlantic Command,¹¹ providing staff at SOUTHCOM with unaccustomed challenges in what was for them a new AOR.

a. Primary locations where DoD forces assisted¹²

U.S. military assistance focused on Puerto Rico, in support of FEMA, and in the Dominican Republic, in support of OFDA. U.S. military personnel, stationed in Haiti as part of Support Group Haiti, reportedly provided limited assistance in that nation, consistent with their mission and capabilities. In the eastern Caribbean islands, the U.S. military provided limited but very important support, such as the U.S. Coast Guard airlift of the Caribbean Disaster Relief Unit (CDRU) to disaster sites in the immediate aftermath of Hurricane Georges.

b. The scope and nature of DoD operations, including main assets employed

The DoD asset in greatest demand following Hurricane Georges was transport. SOUTHCOM recorded 168 airlift missions, valued at approximately \$51.8 million, in support of FEMA's Puerto Rico operations alone (Ref. 44). These missions consisted of

¹¹ Based on changes in the Unified Command Plan (UCP), U.S. Atlantic Command (subsequently re-designated U.S. Joint Forces Command) transferred responsibility for the Caribbean Sea, Gulf of Mexico, and waters surrounding Central America and South America, as well as islands contained therein, to U.S. Southern Command, effective 1 June 1997.

¹² The following analysis of DoD's Hurricane Georges response draws upon a number of unclassified documents (Refs. 38-43) and interviews with SOUTHCOM, other DoD, and civilian personnel.

airlift of supplies and personnel to the affected region, and fixed wing and helicopter transport within the impact areas, for assessment, passenger transport, or delivery of relief supplies to isolated regions. Typical Requests for Assistance (RFA) from FEMA to DoD included items such as “airlift 100K gallons of water per day from 28 September to 10 October 1998,” or “transport 5,455 rolls plastic sheeting from Ft. Worth to Naval Station Roosevelt Roads (NSRR) (Ref. 44).” In the Dominican Republic, OFDA funded the deployment of six U.S. military helicopters for a period of 2 weeks to conduct overflight assessments and to deliver relief items. In addition to fixed wing and helicopter assets, a ship and barges provided by the Military Sealift Command were employed for the delivery of relief supplies from CONUS to Puerto Rico.

Another major DoD asset employed in the relief operation was a Disaster Relief Joint Task Force (DRJTF), designated JTF Full Provider, which deployed to the Caribbean aboard USS Bataan, with 900 U.S. Marines from the 2d Force Service Support Group (FSSG) aboard. JTF Full Provider personnel conducted operations in support of both Puerto Rico relief operations and foreign disaster assistance. Among the major tasks undertaken by JTF Full Provider were repairing damaged roofs, generating electrical power, clearing roads and other areas of debris, and emergency repairs to structures and bridging. Of particular note, the JTF utilized its reverse osmosis water purification units (ROWPUs) to generate over 200,000 gallons of potable water – a critical item in the aftermath of a natural disaster – even though the JTF was fully operational for less than two weeks.

Just as important to the relief effort as the significant transport and manpower assets contributed by DoD was the array of U.S. military personnel providing management support to disaster operations, including assessment, communications, and logistics expertise, as well as to logistics hubs. Certain DoD assets already present in the AOR prior to the arrival of Georges were fully harnessed to the relief effort. In Puerto Rico, NSRR became the designated Federal Mobilization Site, in effect the logistics hub for FEMA relief operations in the Commonwealth. In fact, NSRR played such a crucial role in the early response to the storm in Puerto Rico that it is difficult to contemplate how the federal response could have been adequately managed without this major military asset in the theater. In another example, from the Dominican Republic, the Military Assistance Advisory Group (MAAG) serving with the U.S. Embassy threw itself full-time into support of the relief effort.

Outside the area damaged by the storm, other DoD personnel and staffs either assisted with the management of hurricane relief operations or deployed in support roles.

SOUTHCOM's Logistics Readiness Center (LRC) conducted 24-hour operations from 19 September until 11 October 1998. The Director of Military Support (DOMS) dispatched military personnel to serve as Defense Coordinating Officers and Defense Coordinating Elements – both essential components of the *Federal Response Plan* – to both Puerto Rico and the U.S. Virgin Islands. A Director of Mobility Forces (DIRMOBFOR), designated by Air Mobility Command (AMC) to coordinate strategic air transport for Puerto Rico, joined many other active duty and Reserve personnel who deployed to the AOR with specialized skills essential to disaster operations. The SOUTHCOM LRC highlighted the “timely response” of U.S. Transportation Command (TRANSCOM) to SOUTHCOM-validated requests for transport as “very noteworthy” (Ref. 42). Other examples of U.S. military response included the Puerto Rico National Guard, SOUTHCOM Special Forces units, and Reserve personnel from a variety of sources.

c. Command and control architecture

U.S. military operations responding to Hurricane Georges were managed primarily through the regional combatant command, SOUTHCOM, in close coordination with other USG agencies. DoD's role within the USG interagency system, and especially the requirement to manage simultaneously domestic and foreign disaster programs, is illustrated earlier in Figure II-4 (Concept of Operations Generating U.S. Military Relief Operations – Hurricane Georges). As that figure notes, CINCSO managed much of the relief operation consistent with the Federal Response Plan, relying on RFAs from FEMA conveyed from the FCO to the DCO in Puerto Rico. Judging that additional assets were required in the AOR, CINCSO subsequently created JTF Full Provider to apply supplementary resources to Caribbean disaster relief operations, foreign and domestic. CINCSO relied heavily on supporting and subordinate commands to provide the actual assets to meet the relief requirements. The overall DoD command and control architecture for this operation is captured in Figure II-6 (Department of Defense Organization – Hurricane Georges).

d. The duration of the response

U.S. military forces were significantly engaged in Hurricane Georges relief activities for 5 weeks. From the time the SOUTHCOM LRC was activated on 19 September until the FEMA FCO formally released DoD on 27 October, U.S. military units were almost continuously engaged in relief operations.

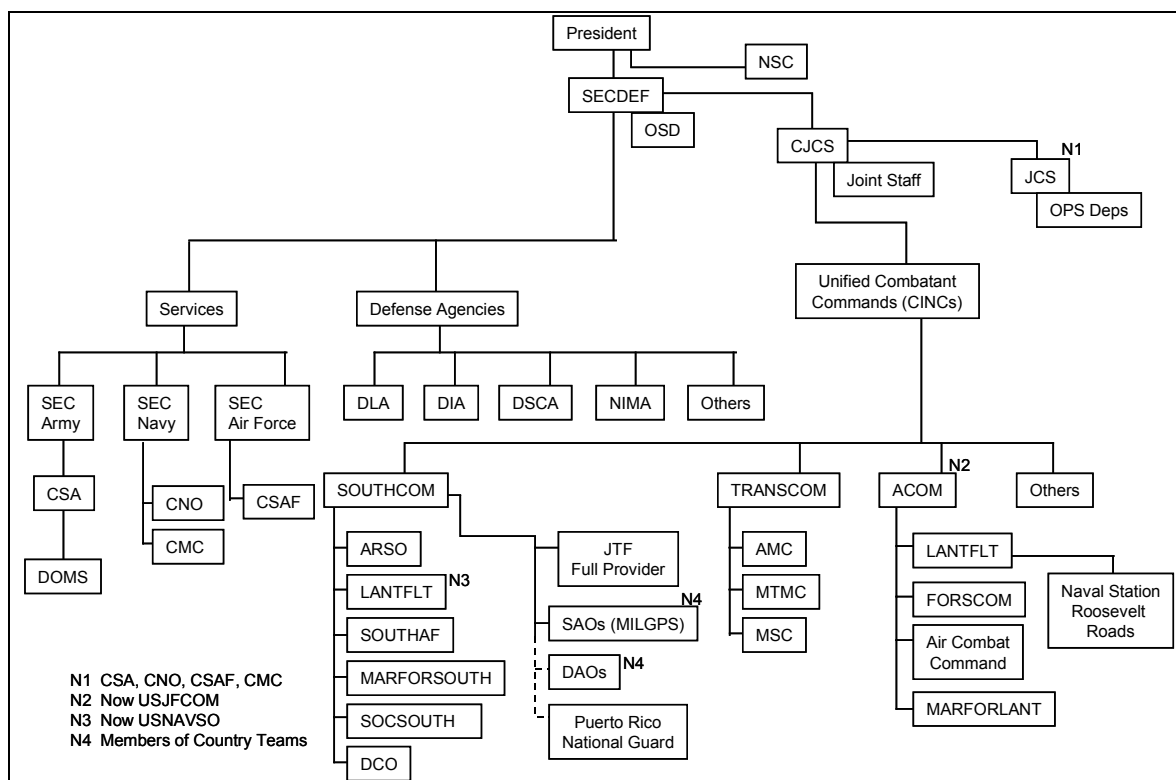


Figure II-6. Department of Defense Organization – Hurricane Georges

e. Financial resources and coordination factors

A substantial portion of DoD relief expenditures following Hurricane Georges was reimbursed by FEMA or OFDA, so that resource generation issues were not significant limiting factors in this operation. Moreover, in the international aspects of the relief operation, USG interagency coordination factors had minimal impact on the DoD response. In the eastern Caribbean and in the Dominican Republic, the two non-U.S. areas where U.S. military assets were largely employed, the U.S. military's relations with OFDA, with U.S. embassies, and with non-U.S. regional and national authorities were generally consistent with established procedure, relatively smooth and effective.

The single coordination factor most widely noted during the Hurricane Georges response was a domestic disaster response factor: the DoD command and control relationship between CJTF Full Provider and the designated DCO in Puerto Rico. This coordination factor related to different perspectives on the appropriate C2 relationship when a JTF and DCO are simultaneously deployed to an AO. From the perspective of the CJTF, the issue was clear: "Upon the establishment of the JTF, the DCO should have been brought under the operational control of the JTF Commander." This viewpoint is supported by the Tactics, Techniques, and Procedures (TTP) publication titled

Multiservice Procedures for Humanitarian Assistance Operations (Ref. 45). The DCO at the time, on the other hand, reached a diametrically opposite conclusion. In the DCO's view, "it seemed the JTF did not understand the DoD MSCA (military support to civil authorities) role, nor the role of FEMA...JTF Full Provider used operational procedures designed for foreign assistance rather than the established procedures used to provide assistance in U.S. territories" (Ref. 46).

2. Mitch Response

The DoD response to Hurricane Mitch far surpassed the response to Hurricane Georges in scope, complexity, cost, and duration, as well as in the range of policy issues it generated. The scope and duration of DoD's response was appropriate to the massive nature of the storm, its high casualties, and the degree to which the disaster overwhelmed local response capacity. The complexity of DoD's response was caused by the multi-country nature of the storm, the coordination questions encountered, and the combination of humanitarian, political, and theater engagement imperatives that drove the USG reaction. Although the unique character of this almost unprecedented storm suggests that U.S. military forces will not face its counterpart soon, the set of resource and policy issues Mitch generated deserve careful scrutiny.

As with Hurricane Georges, SOUTHCOM took a lead role within the U.S. military in responding to this disaster, along with numerous supporting and subordinate commands, units, and individual military personnel. Mitch, however, was the antithesis of Georges in the sense that many traditional USG disaster response systems were overridden as the federal interagency system struggled to cope with the magnitude of the storm. Although OFDA and other USG agencies responded quickly, the limited management capacity of these civilian agencies was not able to keep pace with either the mounting damage or the requirement from the National Command Authorities (NCA) for a large-scale, strategic USG response. DoD personnel took a larger than traditional role in guiding the interagency planning process, in designing an appropriate USG response, and in the direct deployment of units to manage the response on the ground. DoD commanders encountered serious political issues, and potentially serious force protection issues, when asked to respond to the disaster's effect in Nicaragua, where a history of strained bilateral relations clouded the humanitarian imperative. They also had to resolve serious resource issues in the weeks after Mitch struck, issues that required a balance between the elevated demands being placed on DoD and the constrained budgetary authorities readily available for international disaster response.

a. Primary locations where DoD forces assisted¹³

U.S. military personnel conducted significant relief operations in the four Central American countries most affected by Hurricane Mitch: Honduras and Nicaragua, the two most seriously affected nations, and Guatemala and El Salvador, which suffered moderate damage. The primary theater hubs for these operations were Soto Cano Air Base in Honduras – the existing headquarters of JTF Bravo – and Comalapa Air Base in El Salvador, where JTF Aguila was established subsequent to the storm. Country-level task forces subordinate to JTF Aguila were also set up in El Salvador, Guatemala and Nicaragua. In each of the affected countries, U.S. military units concentrated their activities in specified geographic regions, assigned through discussions with host governments, rather than operating country-wide. In addition, U.S. military transport assets based in the United States, air and sea, were employed to move large quantities of personnel and materiel to the AO.

b. The scope and nature of DoD operations, including main assets employed

The scope of the U.S. military disaster relief mission in Central America was very large, ultimately costing \$155 million with a maximum deployment of more than 5,000 military personnel and 63 aircraft. U.S. forces provided services including search and rescue, damage assessments, airfield management, food delivery, immunizations against epidemic diseases, veterinary care, bridge and road reconstruction, water purification, liaison, and planning. During these efforts, DoD personnel interfaced with government officials, international NGOs, local and third country military forces, UN agencies, banana plantation owners, local religious and community leaders, and with traumatized villagers. In order to comprehend the nature and evolution of this large and varied mission, it is useful to view U.S. military operations after Hurricane Mitch in three phases:

- **Emergency Relief Phase** – commencing when the Hurricane struck Central America and continuing through mid-December 1998, characterized by the provision of emergency supplies and search and rescue (SAR) operations in response to immediate needs, provided mainly by forces already located in the affected region, supplemented primarily by in-theater personnel and assets and some personnel and units deployed rapidly from CONUS.

¹³ The summary of DoD's Hurricane Mitch response that follows draws on numerous reports and interviews compiled by IDA. Especially useful were references 43 and 47 through 50, as well as interviews conducted at U. S. SOUTHCOM, with the JTF Commanders, and during field visits to the affected countries.

- **Rehabilitation Phase** – commencing in mid-December and continuing until approximately 26 February, when the SOUTHCOM Crisis Action Team (CAT) was deactivated; this phase was characterized by the planned deployment of U.S. military units, primarily engineering and medical units, into the AO to restore essential transportation routes and medical services.
- **Reconstruction Phase** – commencing at the end of the Rehabilitation Phase and continuing into September 1999; this latter phase, which is not addressed in this report, employed units already scheduled for overseas training to assist with reconstruction projects. Phase three built on the previously scheduled New Horizons exercise series.¹⁴ The Reconstruction Phase was also intended to maintain a supportive U.S. military presence in the region as host governments and U.S. and other donor civilian agencies assumed the lead for reconstruction and rebuilding activities.

During the **Emergency Relief Phase** of operations, the previously established JTF Bravo, headquartered at Soto Cano Air Base in Honduras, served as a major hub for relief operations throughout the region.¹⁵ In fact, for several days after Mitch poured 3 to 5 feet of rain on Honduras beginning on 26 October, Soto Cano was the only airfield in the entire nation capable of handling international relief flights. Relying on its available assets and support deployed from Howard Air Force Base, Panama (including USAF C-130s and C-27s, Army UH-60 helicopters, Navy Special Boat Units, and a small air expeditionary force composed of air operations planners, loadmasters, and civilian technicians), JTF Bravo provided initial assessment overflights, launched SAR operations, and began the air delivery of emergency supplies to civilian victims in Honduras. Special Operations Forces (SOF) from the Air Force, Army, and Navy played a prominent role in this early response.

¹⁴ Prior to Hurricane Mitch, SOUTHCOM New Horizons humanitarian assistance exercises had been planned in Honduras and Guatemala, with 4,200 troops scheduled to participate in training exercises with relief aspects, over a 5-month period. An Enhanced New Horizons program was designed as a follow-on to Hurricane Mitch relief operations, expanded to include 23,200 troops operating in the Dominican Republic, El Salvador and Nicaragua, as well as Honduras and Guatemala. The cost of the expanded training exercise increased from \$18.6 million to \$56 million.

¹⁵ JTF Bravo was established in 1983 to coordinate the command, communications, intelligence, and logistics support for U.S. forces in the region. Among its primary tasks was to provide support for civic action/humanitarian assistance throughout Central America, so JTF personnel had some knowledge of humanitarian operations and requirements. When Mitch struck in October 1998, there were approximately 450 U.S. military personnel assigned to JTF Bravo. During the first several days of the storm, many of those personnel were engaged in immediate tasks to protect the base and its facilities. Among these tasks were around-the-clock sandbagging operations to prevent the flooding of the air base's electrical power station – a threat that would have shut down base operations.

Beginning with a modest air drop of 100 cases of meals ready to eat (MREs) and blankets to isolated communities on 1 November, Emergency Relief Phase operations accelerated exponentially for the next several weeks, as the extent of damage became known and supplies and assets arrived in theater to supplement JTB Bravo's initiatives. By the end of the Emergency Relief Phase, U.S. military personnel had rescued more than 1,000 flood victims, flown 640 missions, treated 3,400 injured or sick people, and delivered nearly 4 million pounds of relief supplies.

Starting with the strong foundation of Soto Cano Air Base, U.S. military operations during the Emergency Relief Phase concentrated on numerous aspects of immediate life-saving assistance. These included:

- Search for and rescue of victims trapped or isolated by flood waters
- Damage assessments
- Assistance to civil authorities
- Transportation of critical relief supplies, such as drinking water, food and medicines, utilizing U.S. helicopters and C-27 and C-130 transport aircraft
- Participating in the supply and upgrading of secondary air distribution hubs, as flood waters receded, to increase the range and reach of relief operations
- Management of international flights into the region – a major logistics challenge.

In addition, U.S. military personnel in the region were called upon to help manage visits by distinguished visitors to the hurricane relief programs. Former President Bush, Mrs. Tipper Gore, and the U.S. First Lady all visited Central America by 16 November.

The Emergency Relief Phase of operations saw a dramatic increase in the geographic reach of U.S. military operations, especially airlift missions. Within Honduras, U.S. personnel worked hard to extend a hub-and-spoke relief operation. And, relief flights began to Nicaragua, El Salvador, and Guatemala, as well. On 5 November approximately 19 U.S. military aircraft, fixed and rotary wing, were available (mission capable) in theater for Hurricane Mitch relief operations, 11 of which were UH-60s. By the end of the Emergency Relief phase, the number had grown to 40, including 13 CH-47s, deployed in all four affected countries.

A significant transition occurred in the character of U.S. military operations during the Emergency Relief Phase as planning and operations became more formalized. Air operations, for example, had been managed immediately after the storm through a combination of Soto Cano capabilities supplemented by an expeditionary operations

group from the 24th Operations Group (24 OG), Howard AFB, dispatched on oral orders from CINCSO. By 8 November an Air Mobility Command (AMC) Director of Mobility Forces (DIRMOBFOR) had arrived to direct airlift assets, and U.S. Southern Command Air Forces (USSOUTHAF) had established a Joint Forces Air Component Commander (JFACC) Forward in theater. Although transitions such as these did not take place seamlessly, they represented a significant upgrade in management capacity as additional DoD assets were allocated to key locations in the SOUTHCOM AOR.

Deployment orders published by the Chairman, Joint Chiefs of Staff, by the authority of the SECDEF, during this period made it clear that the disaster relief mission would operate for an extended period, and would be restructured. These orders increased the number and types of units sent to the region, increased the period of time the units would serve, and initiated the creation of a second JTF to manage expanded relief and rehabilitation operations.

Another aspect of the Emergency Relief Phase with significant implications for DoD was the arrival of a panoply of international relief personnel, civilian and military. Military units from a dozen countries arrived in the AOR, along with virtually the entire international relief community, consisting of UN agencies, international organizations, and NGOs. Determining the most efficient system for working with this array of organizations, as well as host nation officials at the national, provincial, and local levels, was a major issue facing commanders on the ground.

By mid-to-late November, the situation on the ground in El Salvador, Guatemala, Nicaragua, and even Honduras was changing noticeably. Floodwaters had receded, and ground transportation was becoming available to most regions. Most displaced civilians were in some form of temporary shelter, and the threat of widespread epidemics seemed somewhat reduced. Electric power was returning, and national authorities were regaining some degree of control over their government machinery. Although these conditions signaled the departure of many bilateral donors, including relief forces from Mexico, Canada, the UK, the Netherlands, Japan, and France, they set the stage for the transition by U.S. military personnel from the Emergency Relief Phase to the **Rehabilitation Phase** of relief operations.

The Rehabilitation Phase of DoD relief operations focused on the continued provision of medical services, both treatment and prevention, and especially on transportation infrastructure repairs. U.S. military medical personnel worked with their national counterparts in the affected nations to reduce the risk of epidemic diseases

through monitoring, training, and public health measures. Medical units, while present primarily for the health of U.S. forces, conducted numerous medical clinics, treating more than 27,000 Central Americans. Engineering units under the command of JTF Aguila operated in El Salvador, Guatemala and Nicaragua, repairing bridges, other river crossings, and roadways. These units worked with local government officials and USG partners from OFDA, USAID, and embassies to select important projects that could be feasibly completed during the period of deployment. U.S. units reconstructed approximately 90 miles of roads, built 4 bridges and 18 bridge bypasses, drilled wells, and repaired public buildings like schools and medical clinics.

During the Rehabilitation Phase, the total number of troops in the AOR increased dramatically, reaching its greatest number (5,200) in mid-December. The character of U.S. military units and equipment deployed also changed during this period. The Emergency Relief Phase had been characterized by the heavy employment of air assets, both strategic airlift and theater lift, and supply distribution activities centered on logistics hubs. The Rehabilitation Phase was characterized by the shipment of engineering and construction equipment to Central America, and the deployment of larger numbers of units into the countryside to work on infrastructure and medical projects. That is, the footprint of U.S. forces – in terms of size and visibility to the local population – increased noticeably during the Rehabilitation Phase. This phase, consequently, required additional attention to force protection issues and enhanced liaison with local government officials and citizens, with whom troops would be coming into increased and sustained contact. Seaport operations, and overland transport from seaports to operational areas, became more important during the Rehabilitation Phase of Hurricane Mitch operations, as well, as much of the heavier construction equipment arrived by sea.

By 26 February 1999, U.S. forces in Central America decreased (from more than 5,200 in mid-December) to 952 (including 460 personnel stationed at Soto Cano), as the Rehabilitation Phase wound down. During this same period, DoD aircraft in the region for disaster response operations decreased from 54 (total aircraft on hand on 21 December) to 11 (total aircraft on hand on 23 February), and numerous pieces of ground transport and construction equipment were shipped back to home bases. Re-deployment issues, therefore, were another major preoccupation of JTF Bravo and JTF Aguila commanders and staffs during the Rehabilitation Phase.

c. Command and control architecture

Following a request for deployment from USCINCSO and approval by the National Command Authorities (NCA), the Chairman, Joint Chiefs of Staff (CJCS) issued a deployment order on 4 November for Central America disaster response. From that point, CINCSO effectively managed the day-to-day DoD relief mission, in close consultation with the Secretary of Defense (SECDEF), CJCS, and interagency partners, while relying extensively on supporting and subordinate commands for forces. Initially, USCINCSO utilized the existing JTF Bravo as his C2 mechanism throughout Central America.

By 7 November, USCINCSO had developed a disaster relief operational concept that envisaged the creation of a second JTF, called JTF Aguila (Spanish for “eagle”), for the management of relief operations in El Salvador, Guatemala, and Nicaragua. The creation of the second JTF, based at Comalapa Air Base in El Salvador and operating with subordinate country-level task forces in each of the three countries in its AOR, reduced span of control issues for JTF Bravo, and allowed that commander to focus on the massive devastation in Honduras. USCINCSO relied on the two JTF C2 architecture for the remainder of the relief and rehabilitation phases of this operation, until JTF Aguila was disbanded on 23 February 1999. Notably, JTF Aguila did not assume control of operations in its AOR until 28 November, and the first humanitarian projects under the direction of this JTF did not commence until the period 9 December (Guatemala) to 18 December (Nicaragua).

Outside the formal DoD chain of command, the SECDEF determined that he required additional “eyes and ears” to monitor relief efforts and recommend improvements in relief operations. The Secretary, therefore, named the Secretary of the Army his “Personal Representative for Relief Efforts in Central America.” The Army Secretary assumed these duties on 6 November, subsequently visiting Central America to accomplish the SECDEF’s goals (Ref. 51).

The DoD command and control architecture fit within a larger interagency management structure characterized by numerous coordination points and an uncertain chain of command. Relying on authority delegated from the National Security Advisor to the Administrator of USAID (Ref. 52), and subsequently delegated to the director of OFDA, that agency worked with DoD in Washington, at SOUTHCOM headquarters, and in the AO in an attempt to coordinate USG relief efforts. However, OFDA had neither the management resources nor clear command authority to direct DoD or other agency

efforts, especially when DoD was primarily utilizing its own resources to fund U.S. military operations. The National Security Council (NSC) staff created an interagency task force soon after Hurricane Mitch struck Honduras, which exerted a degree of tasking authority over the interagency process. However, this informal coordination mechanism relied on generalized authority and the willingness of federal agencies to participate, rather than on a formal command and control structure or rigorous planning and implementation processes. Similarly, the Secretary of State created a DoS task force in early November, providing an additional point for information exchange within the interagency, but without formal authority to commit resources and direct operations. DoD, in part because of this diffuse USG management system, as well as SOUTHCOM's early involvement and the NCA decision to draw heavily on DoD funding to finance the U.S. disaster response, became one of the lead U.S. agencies, if not the lead U.S. agency, responding to Hurricane Mitch.

The overall DoD command and control architecture for this operation is captured in Figure II-7

d. The duration of the response

From the time the first relief flights departed Soto Cano Air Base on 1 November 1998 until the SOUTHCOM CAT terminated its operations on 26 February, a period of nearly four months, U.S. military forces were continuously engaged in disaster relief efforts, albeit at varying levels of intensity. Additional humanitarian missions, in the context of training and readiness, would continue for seven additional months through the New Horizons exercises.

The lengthy duration of DoD disaster response operations, and the ebb and flow of their intensity, are noteworthy from an analytical perspective, for several reasons. First, despite undeniable pressure on DoD from the USG interagency process to commit additional resources to the Hurricane Mitch relief effort, U.S. military planners established the timeline for the deployment, motivated by a combination of humanitarian imperatives and theater engagement incentives. That is, the decision to initiate a large-scale Rehabilitation Phase of the disaster relief mission, during which the majority of U.S. military forces deployed, grew from a concept of operations advanced within the USG interagency system by DoD.

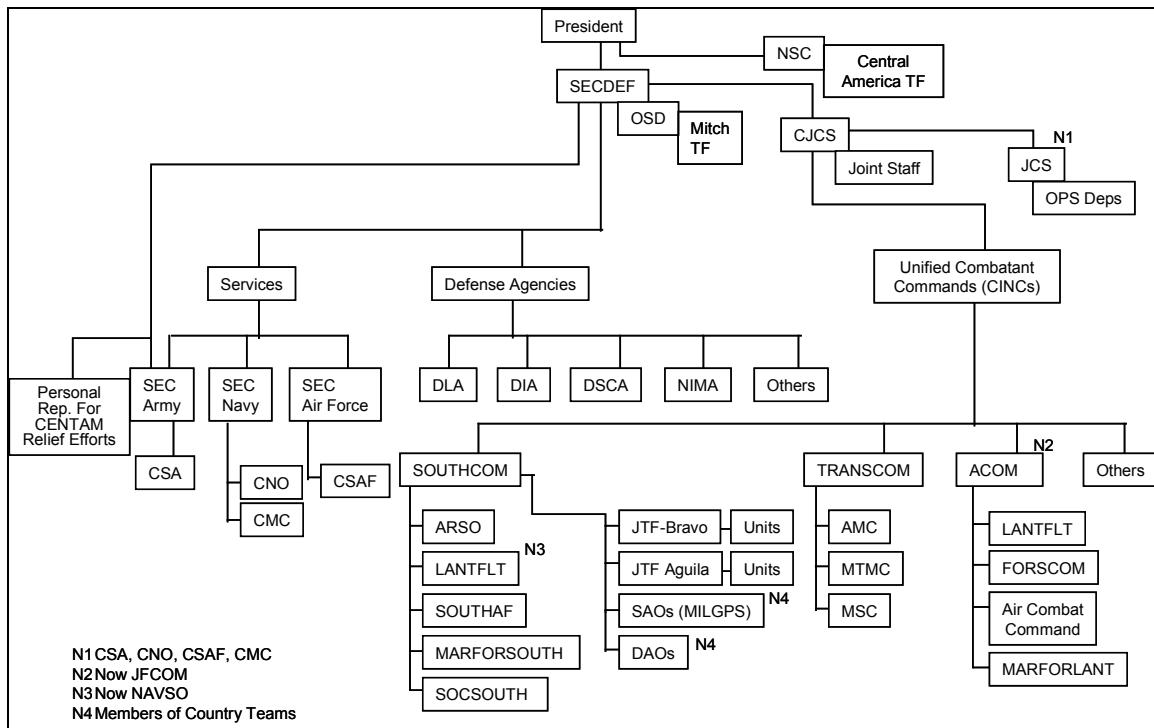


Figure II-7. Department of Defense Organization – Hurricane Mitch

Second, the full DoD deployment – which, in terms of numbers of troops deployed to Central America resembled a standard distribution curve peaking on 18 December 1998 – was late relative to the overall relief needs of the stricken populace. Without denigrating the significant efforts and undeniable contributions of U.S. military personnel in the early relief effort, it is notable that on 18 November, two and one-half weeks after Hurricane Mitch departed Central America, approximately 300 U.S. military personnel were engaged in relief operations across El Salvador, Guatemala and Nicaragua. On that same date, U.S. forces in Honduras had been augmented from JTF Bravo's pre-existing level of 450 to 1,090 personnel. Total U. S. military forces deployed across the four nations of Central America would not reach 2,500 until the last days of November, and would not reach their peak until 18 December, one and one-half months after Hurricane Mitch struck.¹⁶

¹⁶ Temporary forces deployed is only an approximate measure of force capability in the AO. The skills and equipment of the deployed personnel, as well as factors like their morale and the appropriateness with which they were employed, determine the value of forces to the relief effort. What is illustrated by this analysis is that, of the deployment levels ultimately determined to be appropriate by U.S. military commanders, relatively few of those forces were deployed in the weeks immediately following the hurricane.

A third notable aspect of the DoD operational timetable was the degree to which the end-date for operations appeared to be driven by budgetary considerations. Budget limitations within DoD for disaster response operations (see the following section on Financial Resources and Coordination Issues), combined with the disinclination of interagency partners to defray DoD's operational costs, meant that the forces had to redeploy when the dollars ran out, regardless of the status of rehabilitation programs (Ref. 53). That is, the duration of DoD's response for what was ostensibly an emergency operation was constrained substantially by available funds rather than clear-cut measures of effectiveness indicators.

e. Financial resources and coordination factors

The U.S. General Accounting Office estimated total DoD costs for Hurricane Mitch operations at \$223 million. Excluding the New Horizons exercises, approximately \$155 million was expended during the Phase I (Emergency Relief) and Phase II (Rehabilitation) operations on which this study is focused. In order to compile this level of resources within existing DoD capabilities, DoD was directed to draw upon a variety of authorities and accounts. Table II-6 shows the funding sources DoD accessed to fund Hurricane Mitch disaster operations.

Table II-6. DoD's Hurricane Mitch Funding Sources

Source	Amount (\$ m)
1. Drawdown Authority Approved by the President	75.0
2. Overseas Humanitarian, Disaster, and Civic Action Funds (OHDACA)	50.0
3. Chairman of the Joint Chiefs of Staff Commander-in-Chief Initiative Funds (CIF)	20.0
4. OFDA Funds Transferred to DoD	10.0
TOTAL	155.0

The use of OHDACA funds to finance Hurricane Mitch operations placed a virtual moratorium on ongoing DoD humanitarian de-mining and other similar programs around the globe, some of which were unable to be rescheduled in subsequent fiscal years. If the Congress had failed to restore DoD drawdown expenditures in supplemental appropriations legislation, the Services would have been required to absorb the \$75 million from their respective Operation and Maintenance (O&M) Accounts, at potential risk to operations, training, and force readiness.

The DoD response to Hurricane Mitch highlighted a number of coordination factors, as well. Within the USG, intense humanitarian and political interest in launching a sizable and high-profile relief effort was not matched by a comparable level of operational coordination among USG agencies. As the Hurricane Mitch damage assessments came in, the gap between Washington's humanitarian aspirations and its management capabilities put increased pressure both on DoD assets and DoD planning capacity. Coordination problems occurred in gathering and validating damage assessment data, in determining the overall shape and character of the USG response, and in establishing interagency relief priorities, both among affected countries and within countries. Other areas in which coordination issues arose were the public affairs arena, in determining the source of federal funds for disaster relief, in managing publicly donated commodities, and in transitioning among USG agencies from relief to reconstruction programs. In all of these areas, USG interagency coordination factors had an impact on DoD relief operations. For example, weakly managed commodity donation programs, such as the widely utilized Denton Amendment program,¹⁷ complicated the overall relief airlift process.

Coordination problems stretched beyond the USG interagency system to relations with the array of other bilateral donors and international relief agencies that responded to the Mitch disaster. Government relief coordination agencies in the affected country were overwhelmed by the storm's ferocity and scale, and were generally unable to provide a single point for relief coordination for the multiple international agencies arriving to help. Under these circumstances, DoD personnel – those stationed in the affected nations, and those deploying after the storm – invested precious time in seeking coordination mechanisms or, in many cases, creating such mechanisms for themselves and other emergency responders.

Within DoD, post-Mitch disaster relief operations highlighted a number of coordination factors. One of these arose between the two JTFs operating in Central America, especially as to whether Soto Cano would serve as the primary transport hub for the region or whether Comalapa Air Base, the site of JTF Aguila's operations, would

¹⁷ The Denton Program, 1985 Congressional legislation named after former U.S. Senator Jeremiah Denton, allows nongovernmental organizations or private citizens to "use space available on U.S. military cargo planes to transport humanitarian goods and equipment to countries in need." The program is jointly managed by USAID, DoS and DoD (Ref. 54). The USAF reports that 169 Denton air missions were flown between 7 November 1998 and 5 January 1999, carrying approximately 8.4 million pounds of donated cargo (Ref. 49).

serve as a separate hub for military airlift flights within Aguila's AO. Another coordination factor was the process for determining, between SOUTHCOM on the one hand, and supporting and subordinate commands on the other, whether deploying units should be identified by task required or by specific unit. That is, SOUTHCOM's staff tended to specify particular units they wished to deploy to the AO, while supporting and subordinate commands preferred to be tasked with an operational requirement for which they would supply the appropriate unit.

In summary, Hurricanes Georges and Mitch were – for the people and governments of the Caribbean and Central American regions, for the international humanitarian community, and for U.S. military personnel who responded – searing events and daunting operational challenges. Because the storms' far-flung devastation generated massive, multi-faceted relief efforts, these two catastrophic events also generated a reservoir of lessons, findings, recommendations, and issues. These analytical outcomes are discussed in the chapter and appendices that follow.

CHAPTER III

DOD'S CAPACITY TO RESPOND TO MAJOR, RAPID-ONSET NATURAL DISASTERS OVERSEAS: EVALUATION, MAJOR ISSUES, AND FINDINGS

III. DOD’S CAPACITY TO RESPOND TO MAJOR, RAPID-ONSET NATURAL DISASTERS OVERSEAS: EVALUATION, MAJOR ISSUES, AND FINDINGS

The research undertaken for this study on Hurricanes Georges and Mitch provided more than 2,000 lessons identified related to the capacity of DoD to respond to foreign natural disasters. Based on the analytical process described in Chapter I, the lessons identified were sorted by topic, generating a series of specific Findings and Recommendations, which appear in Appendix B. These Findings and Recommendations form the analytic core of this report; their review by DoD personnel responsible for specific issue areas will provide concrete recommendations for changes that should improve the U.S. military response to rapid-onset natural disasters in the future.

In addition, the compiled Findings and Recommendations provide, in effect, a forward-looking evaluation of DoD’s performance during the Hurricane Georges and Mitch disasters. The Findings and Recommendations highlight specific areas in which DoD performed well, and specify areas needing improvement, from the perspective of preparing commanders and units for future foreign disaster relief missions.

In addition to identifying specific steps DoD could take to enhance aspects of its disaster response operations, this study also asked two additional questions as part of the process of evaluating DoD’s capacity to conduct such operations. These two questions, prompted by the Hurricane Georges and Hurricane Mitch case studies, are:

- How, and against what standard, should DoD measure effectiveness during foreign disaster assistance missions that combine humanitarian, political, diplomatic, military, and public affairs considerations; what measures of effectiveness can commanders and policymakers utilize in such complex operations?
- Are there systemic, overarching constraints to attaining effective and efficient DoD performance in foreign disaster relief operations that must be addressed at the highest levels of the Department of Defense and broadly by multiple agencies, commands, and the Services; if so, what are these overarching constraints?

The first section of this chapter, “Measures of Effectiveness,” addresses the question of how U.S. military forces can gauge their effectiveness in disaster operations, while simultaneously defining their appropriate end-state for such missions. The section addresses conceptual issues facing commanders assigned foreign relief missions, and provides guidance on one method for determining mission success.

The second section of this chapter, “Overview of Major Issues,” suggests five higher order policy issues or cross-cutting themes DoD faces in the arena of foreign disaster response that merit attention from senior policymakers. This study concludes that these issues must be addressed in order to achieve substantial overall improvement in DoD’s performance during natural disasters abroad.

By the completion of this chapter, DoD decision-makers should have a clearer understanding of how to evaluate the U.S. military’s performance in foreign disasters, will understand major issues that must be addressed in order to improve performance, and be prepared to examine and implement the concrete Findings and Recommendations that follow in Appendix B.

A. MEASURES OF EFFECTIVENESS

1. Measures of Effectiveness Applied to Analyze DoD Operations

While acknowledging there were deficiencies in planning, limitations in command and control, an excessive employment of personnel, and other aspects of disaster response that could be improved, the fact remains that joint U.S. military forces of up to 5,000 personnel played significant roles in alleviating human suffering and responding to the needs of sister nations of the Americas. Twelfth Air Force History of Hurricane Mitch (Ref. 49)

As the Twelfth Air Force quote suggests, neither in Hurricane Mitch nor in DoD’s response to any natural disaster can relief operations be rated “effective” or “ineffective” across the board, according to a universally accepted scale. With their Hurricane Mitch relief and rehabilitation operations, it is clear that U.S. forces accomplished many good things in Central America. It is also clear, as suggested by this study’s Findings and Recommendations as well as the Twelfth Air Force study, that elements of DoD disaster assistance operations can be improved. Because no universally accepted scale is employed by analysts, even rigorously quantified data on relief operations can be interpreted differently by different observers. For example, SOUTHCOM reported that U.S. military forces reconstructed 162 miles (262 km) of roads and 13 bridges in the

affected countries, a substantial accomplishment considering the logistical challenges involved in deploying forces and equipment from CONUS into an austere, minimally accessible AO (Ref. 43).¹ On the other hand, critics have pointed out that these construction projects amounted to less than 2 percent of the highways damaged in Honduras and Nicaragua alone, and about 4 percent to 6 percent of the bridges damaged or destroyed in the four affected countries. By that calculation, critics ask whether the scale of the results justified the large-scale, expensive deployment of U.S. military engineering units to Central America.²

Beyond such issues of quantifying and evaluating the scale of operations, attempts to measure effectiveness of natural disaster relief operations raise even more fundamental questions about the objectives of such missions. The formal guidance of the NCA and the geographic combatant commander to U.S. military forces engaged in disaster response operations emphasized the importance of reducing human suffering and promoting recovery from the storm. CINCSO's operations order defined the mission's purpose as follows: "to conduct disaster relief (DR) operations in support of United States relief efforts in the CENTAM region in order to mitigate near-term human suffering and accelerate long-term regional recovery." However, interviews with numerous USG officials, civilian and military, who were engaged in the relief operations suggests that at least four other motivations guided U.S. policymakers formulating the Hurricane Mitch response. These included:

- The international political goal of supporting democratic nations in Central America, especially those fragile democracies emerging from decades of conflict
- The domestic political goal of displaying the region's importance to the large number of U.S. citizens of Central American ancestry or origin
- The domestic political goal of preventing dramatically higher levels of immigration into the United States by desperate disaster victims
- The goal of continuing SOUTHCOM's theater engagement objective of "cooperative opportunities...to create conditions that support the development of institutions which advance democracy and regional stability (Ref. 58)."

¹ The U.S. GAO reports slightly lower figures for highway and bridge reconstruction: 90 miles (145 km) of roads and 4 bridges.

² USAID estimates that about 8,900 miles (14,300 km) of primary highways and rural roads required significant repairs in Honduras and Nicaragua, and that 234 bridges were damaged or destroyed in Central America (Ref. 65). DoD and GAO reported higher numbers of bridges damaged: 356 (Ref. 48 and Ref. 50).

In any major USG response to a large-scale foreign natural disaster, planners will encounter the same or a similar list of USG political and humanitarian priorities, each of which may generate a different scale for measuring effectiveness. During the rehabilitation phase of the DoD Hurricane Mitch response, for example, the deployment of U.S. military engineering units generated widely divergent reviews within the USG, according to interviews conducted for this study. Professional disaster responders and development professionals within USG civilian agencies almost uniformly viewed the deployment of JTF Aguila engineering units as not cost-effective. These individuals emphasized the relatively high ratio between cost and size of units deployed, on the one hand, and actual construction accomplishments in the affected areas, on the other. A sizeable number of these interviewees expressed the view that the deployment appeared to constitute primarily a training exercise for U.S. military forces. Military officers, on the other hand, and especially U.S. diplomatic personnel charged with enhancing bilateral relations between the USG and Central American nations, rated the deployment of engineering units as highly successful. By this group's standards – military-to-military contacts and visible U.S. presence in support of friendly democratic neighbors, as well as actual construction accomplishments – the JTF Aguila engineering projects were very effective.

Recognizing that defining measures of effectiveness will be an issue in any foreign disaster assistance operation, this study established seven criteria to measure effectiveness in such operations. These seven criteria were used during this study to evaluate DoD's disaster response capabilities and to define areas for improvement. The criteria are:

1. Was the DoD action based on a sound and accurate assessment of conditions at the disaster site?
2. Was the DoD action governed by quantifiable measures of effectiveness that were known to planners and operational commanders? That is, did those personnel actually planning and conducting the operations have explicit guidance on what goals they were to accomplish among the many needs encountered during a large-scale natural disaster?
3. Was the DoD action well coordinated with other USG agencies and international disaster responders, including with the policymakers at the home headquarters of these agencies and their operational representatives in the AO?

4. Was the DoD action timely according to the needs of disaster victims, given logistical barriers and competing priorities?
5. Was the DoD action effective, based on the highest priority needs of disaster victims? That is, recognizing that political and theater engagement priorities may also play a role in defining missions, did the mission remain sufficiently focused on the requirements of disaster victims? And, did U.S. military forces address the highest priority needs of those victims?³
6. Was the DoD action consistent with existing USG and/or DoD doctrine and procedures?
7. Was the DoD action cost-effective, both in terms of accomplishing the mission at the lowest feasible budget cost, and in terms of deploying the assets best aligned with mission requirements?

As noted above, no single, definitive MOE can be applied in all cases to determine whether a disaster relief operation was conducted effectively. Applying these seven measures of effectiveness, however, provides a useful set of standards against which to measure the response to the 1998 hurricanes as well as future DoD operations. In tabular form, as illustrated in Table III-1, these seven MOEs can be utilized as a tool, not only for post-event evaluation, but also to guide planners of future U.S. military disaster relief operations.

³ Although the highest priority needs of disaster victims will be case specific, useful guidance on prioritizing needs and focusing on disaster victims is found in the NGO- and IO-developed document *Humanitarian Charter and Minimum Standards in Disaster Response*. The value of this document is described in Finding HO-1 in Appendix B.

Table III-1. MOEs in Foreign Disaster Assistance Operations

Measure of Effectiveness	Scale
<i>Were the disaster relief operations:</i>	<i>Effective ----- Ineffective</i>
Based on sound data and assessment?	Yes----- No
Defined by quantifiable MOEs?	Yes ----- No
Well coordinated with other responders?	Yes----- No
Timely, based on needs of victims?	Yes----- No
Effective in meeting victims' priorities?	Yes----- No
Consistent with existing doctrine?	Yes----- No
At lowest cost, consistent with mission?	Yes----- No
Conducted with units tailored to mission?	Yes----- No

2. Incorporating quantifiable measures of effectiveness into DoD planning and operations

Quantifiable MOEs that relate mission effectiveness to attainment of a specific humanitarian end state – such as “potable water provided for 50,000 victims for two weeks” – may have particular utility for U.S. military planners and commanders in future foreign disaster operations, based on this study’s analysis of Hurricane Mitch. The scale and breadth of that crisis created a virtually endless list of humanitarian tasks, and considerable initial uncertainty over which agencies would be responsible for which relief missions. Moreover, as DoD planners quickly discovered, the overall rehabilitation and reconstruction of Central America was to be a process measured, not in months, but in years if not decades, and U.S. military forces tasked with the national defense could not reasonably be expected to stay on station for much of that recovery period. Similar conditions are likely to prevail in future large-scale, rapid-onset natural disasters. Under those conditions, more widespread use of quantifiable MOEs in planning and conducting operations may assist in defining mission success and in fixing the mission end state.⁴

⁴ This point is reiterated in draft Joint Pub 3-07.6, *Joint Tactics, Techniques, and Procedures for Foreign Humanitarian Assistance*. In that publication, the Joint Staff notes that “Accurate and effective MOE contribute to mission effectiveness in many ways. They help identify effective strategies and tactics and points at which to shift resources, transition to different phases, or alter or terminate the mission. MOE assist the commander in determining when the situation has been returned to pre-disaster conditions” (Ref. 62).

CINCSO and other DoD leaders creatively managed the extent and duration of the U.S. military involvement in Hurricane Mitch by (1) assisting USG interagency planners to define mission phases, and by (2) dovetailing DoD rehabilitation operations with the ongoing New Horizons exercises. CINCSO's operations order also usefully defined transition factors for the return of the AOR from JTF Aguila to JTF Bravo, including such criteria as "conditions set for critical life support requirements (food/water distribution, sanitation, emergency medical, etc.) to be contracted or assumed by host nation or civilian agencies." Such transition factors helped shape the operational end state and, consequently, the end date for DoD operations. Nonetheless, the Mitch response was costly for DoD in terms of resources drained from other accounts and other priorities, and the relief effort substantially occupied the staff resources of a geographic combatant command for several months. If available DoD budgetary resources for humanitarian assistance activities had not, in effect, been exhausted by the Central American relief operations, it is not clear whether U.S. military forces would have been withdrawn by February 1999.

When U.S. military forces are engaged in large-scale foreign disaster assistance operations that are likely to be of long duration, definition by DoD planners of quantifiable MOEs for operations by U.S. forces might be appropriate. Standard MOEs for food, water, health, shelter, care of displaced persons, and similar categories of assistance are available through publications such as OFDA's *Field Operations Guide* (Ref. 26) and through consultations with civilian organizations such as PAHO. Discussions with host nation ministries with technical expertise, such as ministries of health, public welfare, and public works, are another source of disaster response MOEs, especially those related to when conditions of normalcy have returned. One set of Findings and Recommendations developed for this study explicitly suggests broader use of such MOEs. [See Finding DP-2: ***Better use can be made of disaster relief "measures of effectiveness" (MOEs) – especially quantifiable MOEs – for mission and redeployment planning.***]

B. OVERVIEW OF MAJOR ISSUES

In addition to providing specific suggestions for improvement, certain recurring themes in the 69 Findings and 162 Recommendations resulting from this study suggest that there are higher order policy issues or cross-cutting themes DoD faces in the arena of foreign disaster response that merit attention from senior policymakers. U.S. military commanders and DoD officials can and should draw on the specific recommendations of

this study to improve performance in specific disaster response operations. But, in order to attain optimal DoD performance in such operations, and especially in order to overcome command, Service, and institutional boundaries that can hamper reform, senior policymakers must address certain overarching policy questions that systemically constrain the U.S. military's disaster response performance. Five of these higher order policy issues are:

1. The USG interagency response system for large-scale foreign disasters, within which DoD relief operations are embedded, is fundamentally flawed. The USG foreign disaster response system requires fundamental reform, for which the domestic *Federal Response Plan* provides a useful model.⁵
2. Modest, well-designed investments in force management prior to a disaster declaration can substantially improve readiness and rapidity of response.
3. The process of translating humanitarian needs encountered during disasters into U.S. military forces and capabilities to meet those needs can be improved.
4. DoD's coordination with multiple responding entities can and should be substantially improved, both in the U.S. military's overall approach to disaster response operations and, specifically, at the scene of a foreign disaster.
5. Effective, timely response to large-scale, rapid-onset disasters demands more reliable funding mechanisms, within DoD and within the USG interagency system.

⁵ This policy issue focuses on improving foreign disaster operations within the USG. However, it is not the intent of this study to suggest that the USG, even with its substantial civilian and military relief delivery capabilities, should adopt a "go it alone" approach to natural disaster response operations overseas, or even that the USG should take the lead in such operations. Numerous assets and highly skilled response personnel are available from the UN system, IOs, NGOs, and other donor nations, among other international resources. Ensuring that these international assets are engaged in the response to major disasters, for the benefit of disaster victims and so that U.S. taxpayers do not provide a disproportionate share of relief costs, makes sense. Optimally, the USG response to a natural disaster abroad should be a part of a coordinated international effort led by the appropriate UN, regional, or other disaster team. It is the conclusion of this study that substantial coordination issues remain to be addressed within the USG to provide quicker, more effective, more economical relief when foreign disasters strike. Ultimately, however, the integrated USG disaster response effort should be but a component of a coordinated international operation.

Underlying the following presentation of the five major policy issues are four assumptions that flow from the Hurricanes Georges and Mitch experience about the future of DoD foreign disaster response missions. First, this study assumes that foreign disaster relief missions will continue, and may increase in frequency, as global population growth puts more individuals at risk of encountering damaging natural phenomena. Second, DoD's performance in assigning military assets to civilian disaster response has been adequate, but can be substantially improved. Third, DoD is unlikely to receive substantial additional assets to manage foreign disaster relief missions, so performance improvements must be achieved through enhanced management of existing assets. Fourth, DoD should continue to play a substantial supporting role within the USG, rather than assuming a leadership role, in the response to foreign natural disasters, so that improved U.S. military performance relies in part on reform within the USG interagency process.

At the conclusion of the discussion of each major policy issue, a list is provided of specific Findings, and the codes for suggested Recommendations, so that readers can locate relevant Findings and Recommendations in Appendix B. Findings and Recommendations so noted are those relevant to and indicative of the major policy issue identified. At the conclusion of the discussion of major policy issues, a list of those Findings not associated with the five major policy issues is also presented.

1. The USG interagency response system for large-scale foreign disasters, within which DoD relief operations are embedded, is fundamentally flawed. The USG foreign disaster response system requires fundamental reform, for which the domestic *Federal Response Plan* provides a useful model.

If there is a single consensus finding supported by the many analyses and interviews compiled for this study, it is that the USG system for managing large-scale, rapid-onset foreign disasters – if, indeed, it can be characterized as a “system” – is seriously inadequate. Virtually every source examined or interviewed for this study cited the need for better interagency coordination, and provided examples of how weak USG coordination affected the timeliness or effectiveness of Hurricane Mitch relief operations. The current USG interagency disaster response process is characterized by informality, absence of formal doctrine, uncertain leadership or direction, lack of serious contingency planning, and unclear reporting relationships. In short, virtually all the elements that

should characterize an efficient emergency response system are missing.⁶ This study's Findings indicate that flawed interagency management processes delayed and complicated the Hurricane Mitch response, and placed unwarranted demands on DoD's planning and management capacity.⁷

The interagency disaster response system has two core problems: first, there is, no single point of coordination and leadership in planning for and management of crises, and second, there is no clear template establishing interagency process during a crisis. At least in theory, the single point of coordination issue should have been addressed through the combination of an existing humanitarian assistance statute and subsequent designation of an interagency coordinator. The nation's foreign assistance law⁸ authorizes the President "to appoint a Special Coordinator for International Disaster Assistance...." As noted above, through a 1993 memorandum from the National Security Advisor to heads of executive branch departments and agencies, the USAID Administrator was designated to be that Coordinator. The 1993 memorandum reads in part: "As Special Coordinator, the Administrator will be responsible for promoting maximum effectiveness and coordination in responses to foreign disasters by United States agencies and between the United States and other donors. These responsibilities include the formulation and updating of contingency plans for providing disaster relief."

In reality, neither the USAID Administrator nor USAID's subordinate disaster relief organization, OFDA, has the stature or authority within the USG interagency process to compel coordination among more powerful departments and other entities. In many smaller-scale disasters, especially those remote from U.S. political, economic or media interest, a measured USG response is managed quite effectively by OFDA and interagency partners. In a large storm like Mitch, however, or in other crises

⁶ FEMA states that a multiagency operational structure should be based on the principles of the Incident Command System (ICS), developed by the fire and rescue community. The elements of such a system – most of which are absent from the USG foreign disaster process – are: (1) use of common terminology; (2) modular organization; (3) integrated communications; (4) unified command structure; (5) action planning; (6) manageable span-of-control; (7) pre-designated facilities; and (8) comprehensive resource management (Ref. 19).

⁷ The analysis contained in this section refers to the USG management of large-scale disasters. The great majority of USG responses to foreign natural disasters are relatively small-scale and are managed well under the existing system, headed by the Office of U.S. Foreign Disaster Assistance. For example, in 1998 OFDA reported that, of 67 foreign natural disasters (including epidemics and droughts) declared by U.S. ambassadors, fewer than 20 generated a USG response exceeding \$500,000 in value.

⁸ Section 493 of the Foreign Assistance Act of 1961, as amended, 22 U.S.C. 2292b.

characterized by intense public, media, and governmental interest, the current weak coordination mechanisms are overwhelmed. Attempts to develop workarounds, like the NSC Task Force on Hurricane Mitch, provide useful venues for information exchange and tasking, but do not develop smoothly functioning planning or operational coordination cells.

Systems to harness the USG interagency process to disaster response tasks in a coordinated fashion run afoul of fundamental structural issues within the USG federal architecture, as displayed in Figure III-1. This figure illustrates how three separate chains of command – DoD, DoS, and USAID – each with its own representation within the region (SOUTHCOM, Embassies, OFDA regional staff, respectively) – directly engaged in foreign disaster response operations to a degree. For disasters that affect both the United States and foreign countries, USG chains of command are expanded to four, with the addition of FEMA, as illustrated in Figure III-2.

Each of DoD's four geographic combatant commands, for example, mentions humanitarian and disaster assistance in the command's strategy or mission documents (Refs. 55-58). The U.S. Ambassador in a disaster-stricken country, as the President's representative in that country and head of the USG country team, naturally feels a responsibility to put his or her imprint on significant bilateral activities like disaster operations. USAID/OFDA personnel, drawing on the coordination authority granted to their Administrator, and armed with budgetary resources provided under the International Disaster Assistance (IDA) account, believe they have an important management role in disaster response, as well. The upshot of these divergent perspectives and management structures is uncertain USG leadership or coordination during major, rapid-onset disasters, both in Washington and in the affected nation or region.

A second factor that further weakens USG coordination is the absence of a clear template governing interagency process during a crisis. That is to say, no USG-wide plan or doctrine currently exists to guide interagency actors on how they should proceed to accomplish fundamental disaster response tasks like assessment, reporting, priority setting, requests for assistance, establishment of a coordination center in Washington, establishment of a coordination center in the affected country, or dozens of other critical tasks. For example, in the essential process of damage assessment, no current statute, regulation, doctrine, memorandum of agreement, policy paper, or guidebook provides definitive interagency guidance to USG civilian and military personnel on how many USG assessment teams will be dispatched to the crisis area or who will dispatch them; on how long they should stay or with whom they should meet; on how Washington-based

assessment teams should interact with the U.S. Ambassador; on whether DoD and civilian agencies should send joint teams; on how assessment data will be transmitted to Washington or who will review it; on how assessment data will be reconciled with non-USG sources; or on the process for translating assessment data to relief priorities. The uncertainty over how to manage the USG assessment process is mirrored manyfold in other steps of the disaster response process. When this unclear process is combined with the uncertain leadership noted above and the exigencies of large-scale, rapid-onset natural disasters, deterioration in the quality and timeliness of the disaster response is almost guaranteed.

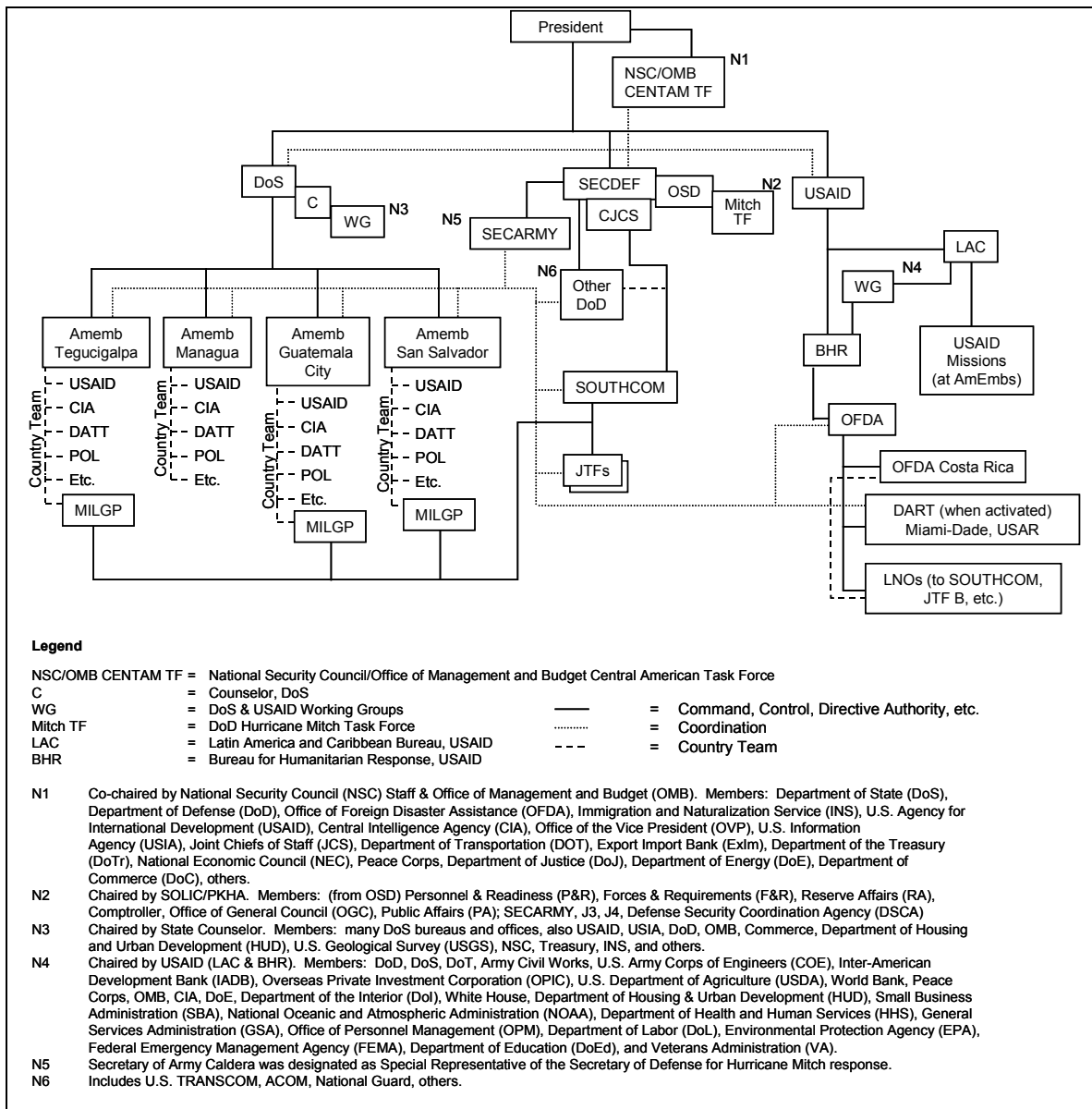


Figure III-1. USG Organization for Hurricane Mitch

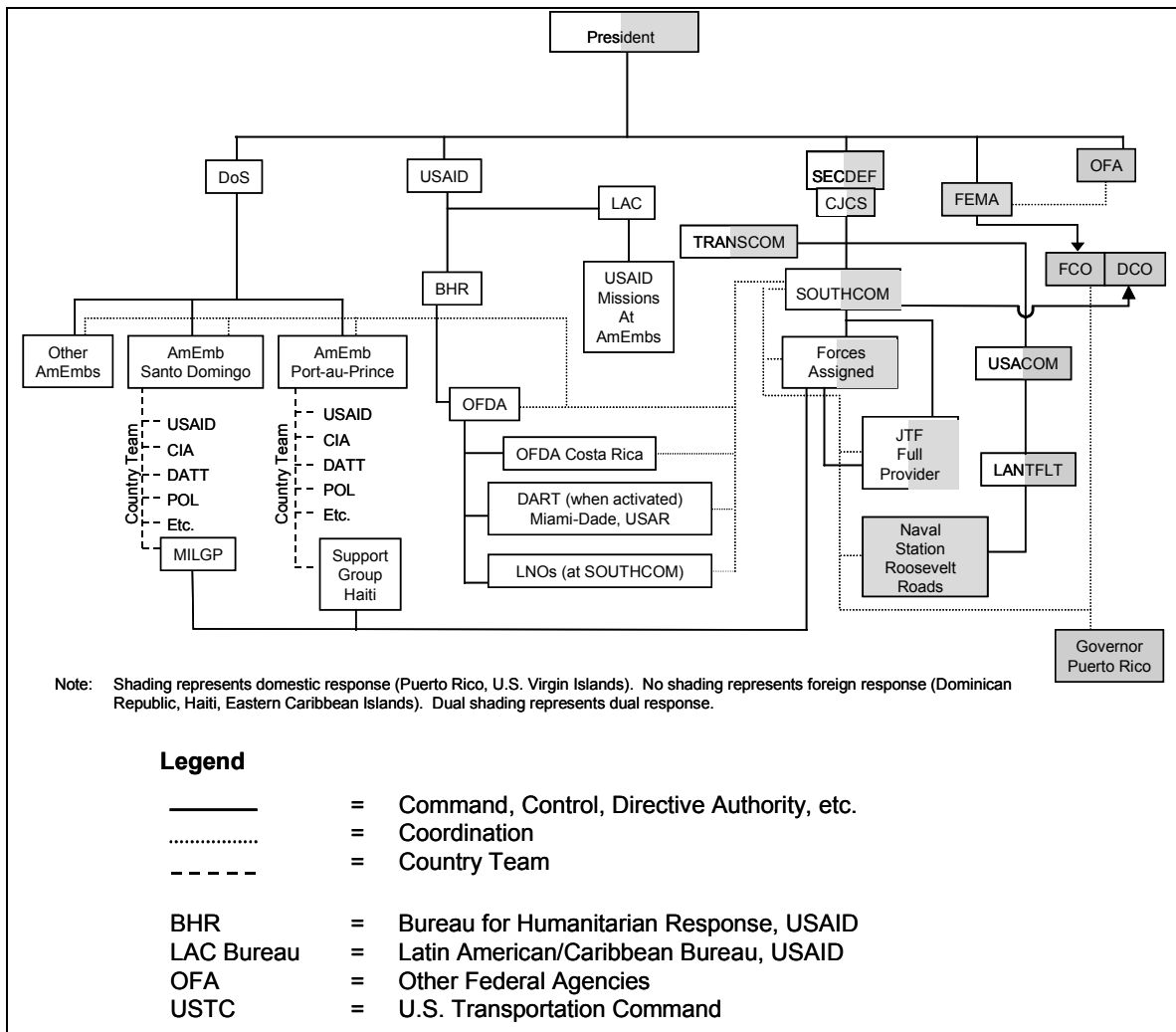


Figure III-2. USG Organization for Hurricane Georges

The major flaws in the USG foreign disaster management system cannot be solved by DoD alone. However, DoD policymakers and commanders may be uniquely qualified to recognize the enhancements that could be made in interagency command and control arrangements and doctrine, and DoD support would be essential to reform the system. It was precisely the major organizational gaps outlined in this section that impelled DoD to engage in disaster response planning, and that generated increased interagency pressure on DoD to expend funds and deploy substantial troop contingents to Central America. Clearly, there is no guarantee that, with improvements in interagency coordination, a decrease in DoD involvement in foreign natural disasters would be forthcoming, nor is such a decrease necessarily desirable. But DoD and all interagency actors, not to mention disaster victims themselves, would benefit from a streamlined USG response system.

Findings and Recommendations related to interagency operations include:

- Finding AI-1: “DoD, other USG agencies, and many other sources each generated damage and needs assessments following Hurricane Mitch. It was often unclear which of these assessments was authoritative, or how the assessments related to each other.” [Recommendations AI-1-1, AI-1-2]
- Finding CC-4: “A critical element of responding to foreign rapid-onset disasters is shortening the time required to respond. This includes estimating the consequences of the disaster, determining the USG response, identifying the USG capabilities that are needed for the response (civilian or military), and then delivering the capabilities to the affected area. Combining these functions in a single action center would facilitate rapid USG and DoD response to foreign HA/DR operations.” [Recommendations CC-4-1, CC-4-2]
- Finding CI-1: “Prior to and during the Hurricane Mitch disaster, the placement of DoD liaison officers (LNOs) at key USG civilian agencies, as well as the placement of civilian agency LNOs at key DoD C2 nodes, paid high dividends.” [Recommendation CI-1-1]
- Finding CI-2: “Hurricane Mitch illustrated that the USG interagency system lacks sufficient contingency planning or operational planning capacity for large-scale, rapid-onset natural disasters, especially those affecting more than one nation.” [Recommendation CI-2-1]
- Finding CI-3: “Command and control of USG international disaster assistance is diffuse. There is no single point of accountability within the interagency system, and no formal doctrine governs the USG response to foreign disasters. During the Hurricane Mitch response, the absence of a management focal point and clear interagency doctrine hampered interagency coordination, and delayed effective response.” [Recommendations CI-3-1, CI-3-2, CI-3-3]
- Finding CI-4: “Preparing a list of disaster-prone countries, based on input from all USG agencies active in disaster response, would facilitate contingency planning, preparedness, and training, and help establish a higher priority for those nations for accessing information and intelligence sources.” [Recommendation CI-4-1]
- Finding LS-6: “Logistics support during the Hurricane Mitch response would have been more effective if DoD and USG interagency partners had collaborated in two areas: (1) better coordination in contracting and procurement of logistics goods and services, and (2) better information exchange between supporting combatant commands and supported civilian response agencies. Collaboration in these two areas for future disaster response operations will result in more effective support.” [Recommendations LS-6-1, LS-6-2]

- Finding OT-1: “DoD-sponsored disaster response exercises that involved host nation, NGO, IGO, IO and USG participants significantly helped prepare disaster responders for Hurricanes Georges and Mitch. Future exercises can be enhanced by (1) addressal of financing issues; (2) greater participation by forward-deployed DoD units and personnel; (3) more participation by NGOs, IGOs, and IOs; and, (4) Country Team and Washington interagency representation in the exercises.” [Recommendation OT-1-1]
- Finding PA-1: “Public affairs (PA), especially PA targeted to host nation populations, could have been better managed by DoD and the USG in general during the response to Hurricane Mitch. Improvements in interagency doctrine, planning, staffing, and coordination are required to improve PA output during future large-scale foreign disasters.” [Recommendations PA-1-1, PA-1-2, PA-1-3]
- Finding PA-3: “During the Hurricane Mitch response, many organizations sought to use the Denton Program to transport donated supplies to Central America. This caused numerous problems, as the Denton Program is not designed to operate efficiently during a rapid-onset disaster.” [Recommendations PA-3-1, PA-3-3, PA-3-4]

2. Modest, well-designed investments in force management prior to a disaster declaration can substantially improve DoD readiness and rapidity of response.

This study agrees with the conclusions of many participants in Hurricane Georges and Mitch operations that the DoD responses could have been more rapid, and that deployed commands and units could have been better prepared for their assigned missions. There is a divergence of opinion, however, on how to achieve improvements.

A number of sources, civilian and military, interviewed for this study argued that DoD should restructure U.S. military forces to create specialized units for disaster relief or other humanitarian operations. These individuals based their belief on the argument that U.S. forces are not appropriately trained or configured for humanitarian response, that generalized HA/DR training in service and joint schools will never reach a critical mass of commanders, and that the solution must be found in changes to force structure.

Another body of interviewees contended that currently configured forces, if trained and exercised in humanitarian operations, could conduct these operations successfully. This school raised concerns that any plan to create specialized humanitarian units would, in a resource-constrained budgetary environment, degrade DoD’s warfighting capability. More generally, this group of individuals contended that

creating specialized cadres for service only in operations other than war risked atomization, or excessive specialization, within the U.S. military.

The Findings and Recommendations contained in this study, while taking into account the significant arguments advanced by both proponents and opponents of specialized humanitarian units, suggest a “third way,” or middle ground, to enhance DoD performance during disaster relief operations: discrete improvements in force management. The thrust of this study’s Findings and Recommendations related to DoD forces is the conclusion that an integrated series of force management enhancements, many of which are in themselves relatively modest, can produce a significant improvement in DoD’s capability to conduct foreign disaster relief operations. The major issue for DoD policymakers is how to impel the recommended series of alterations in force management – which consists of training, personnel management, unit assignments, and other changes – given the dispersion of responsibility among Services, commands, and schools for these recommended reforms.

In their most distilled form, the Findings and Recommendations regarding force management argue that DoD can and should provide, at the disaster scene, commanders and staffs more familiar with disaster missions and units more capable in humanitarian operations, and that these outcomes should be doable and affordable. This study’s analyses of Hurricane Georges, and especially of Hurricane Mitch, suggest key points in the process of planning and conducting a disaster relief operation where modest management changes would have significantly altered the performance of U.S. military units. For example, geographic combatant commands have relied heavily on the JTF structure for the management of contingency operations like disaster response, and this mechanism was selected by CINCSO to manage both Georges and Mitch. As the selection and assignment processes operated in 1998 and currently operate, both JTF commanders (CJTF Full Provider and CJTF Aguila) were pulled from assignments only tangentially related to disaster response, given a few days of hurried briefings, and dispatched on very short notice to manage complex political/military/humanitarian operations in the middle of a crisis.⁹ Under current operating procedures, future JTF commanders, replicating the experience of Commander JTF Aguila, will be meeting their staffs for the first time as they arrive at the scene of destruction, since JTF headquarters

⁹ This analysis is not intended as a critique of the individual commanders. On the contrary, under the circumstances, they appear to have performed in an exemplary fashion, despite the problematic systems that determined how they were selected for their assignment and how much preparation they would receive.

staffs are routinely selected from units other than the commander's. Under current methods of selecting JTF staffs, there is no guarantee that the contributing command will have any particular knowledge about or awareness of disaster relief operations.¹⁰

An example of a force management reform, of the type offered by this study, would be to apply a version of the FEMA model of disaster management to the selection of JTF commanders. Recognizing that FEMA, like DoD, will have to manage a certain number of crises in a given year, that agency pre-designates a cadre of 15-20 senior federal employees who are slated to serve as Federal Coordinating Officers (FCOs) – the senior civilian federal manager at the disaster scene within the United States. FCOs train rigorously in the field of disaster management, and spend time engaged in liaison activities with civilian and military counterparts in regions where they are likely to serve (Ref. 68). Applying this concept to DoD operations, one approach would be to pre-designate, either on a regional or global basis, a small group of senior officers eligible to command a JTF, for a period of standby assignment while fulfilling their primary duty assignment. This cadre would receive intensive training in the management of contingency operations, interact with likely civilian partners (within and outside the USG), and devote time to the liaison activities at potential disaster sites to which they might be deployed. The expected outcome of such an investment would be the deployment of highly trained JTF commanders capable of hitting the ground running to manage DoD disaster relief operations.

Recognizing that creation of JTFs and the assignment to these commands of primary HA/DR responsibility will likely be the HA/DR management model of choice, force management reforms to enhance foreign disaster relief operations are attainable in four categories related to JTFs:

- **Pre-designate HA/DR JTFs:** For a specified period of assignment geographical combatant commands could (1) configure and train standby JTFs from assigned forces, or (2) pre-select and pre-train selected combat support and service support task units and headquarters (e.g., corps support groups, force service support groups, engineer brigades, or similar commands) to serve as the JTF.¹¹

¹⁰ In the cases examined for this study, in the SOUTHCOM AOR, the geographic combatant commander had limited forces from which to draw a standby JTF organization. It is recognized that some geographic combatant commands, with more assigned forces, have formed standby JTFs designated for HA/DR missions.

¹¹ Yet another approach to managing the force to enhance foreign disaster response operations would be to examine the current parameters of Joint Forces Command's Joint Task Force Civil Support.

- **Pre-designate JTF Commanders:** For a specified period of time, a pool of standby potential JTF commanders could be designated, either within geographic combatant commands or centrally for assignment to geographic commands requiring augmentation. These pre-designated commanders would undergo annual training comparable to that provided to the FCO and DCO for domestic HA/DR operations.
- **Pre-designate JTF Headquarters:** Establish one or more standby JTF headquarters in JFCOM, composed of civilian and military personnel specially trained in HA/DR assessment and other skills. Conceptually akin to the headquarters of a Marine Expeditionary Unit (MEU), such a standing headquarters would augment the JTF created by the geographical combatant command with special skills not normally available – in effect a strategic DJTFAC for HA/DR operations.
- **Pre-designate Task Units for HA/DR Missions:** For a specified period of time, pre-designate Active Component units with capabilities likely to be required for HA/DR operations from across the Services, with mission-essential task lists (METL) altered to fit the likely HA/DR tasking.

Table III-2 illustrates a series of these types of force management options, and others that might be accomplished within the authority of geographic combatant commanders. The left column in Table III-2 describes events as they actually occurred prior to or during Hurricane Mitch operations; the right column suggests a relatively modest force management reform that could have improved DoD's performance.

In short, lessons identified during Hurricane Georges and Hurricane Mitch suggest that force management for disaster response and other humanitarian operations can improve the management of DoD relief missions without major additions to force structure.

Although JTF Civil Support now focuses solely on weapons of mass destruction (WMD) within the boundaries of the United States, its role might theoretically be expanded in the future so that this standing JTF would serve as the locus for planning and stand-by forces for overseas natural disasters, as well.

Table III-2. Indicative Force Management for Enhanced Relief Operations

CIRCUMSTANCES DURING HURRICANE MITCH	POSSIBLE ENHANCEMENT
JTF commander, although highly qualified and motivated, had limited background in natural disaster relief operations and virtually no time to prepare for deployment	Create annual standby cadre of candidate JTF commanders for deployment to humanitarian operations; provide specialized training and orientation
SOUTHCOM DJTFAC, although it deployed rapidly and was useful to the Commander JTF, lacked familiarity with disaster operations.	Provide humanitarian operations cell in each geographic combatant command DJTFAC, with skills in damage assessment, liaison with civilian humanitarian agencies, and other disaster response skills
JTF headquarters component deployed with little warning and limited familiarity with relief operations	Designate annually several units per geographic combatant command to provide headquarters elements for JTFs deploying for humanitarian operations that year; provide such units with specialized training and orientation; ensure that the unit METLs include HA/DR tasks
Delays in locating and deploying JTF task units, primarily from CONUS; problems linking these units to available transport	Refine advance planning to pre-identify units with capabilities most likely to be deployed, such as aviation units, and generically to build TPFDDs for these units; for high-probability disaster operations, like Caribbean hurricanes, pre-identify and pre-position equipment at suitable locations
Military Groups (MILGPs) and Defense Attachés (DATTs) in affected nations engaged quickly and professionally in HA/DR operations, but were unfamiliar with these procedures or the roles of their civilian counterparts, within and outside the USG	Recognize the “first responder” role of SAOs and DATTs. Make initial HA/DR a responsibility. Provide formal training and orientation.

In addition to Findings and Recommendations related to JTF configuration and staffing, other force management improvements can be made in the areas of preparing forward-stationed forces, training, personnel support, and mobilization of Reserve Component forces. Findings and Recommendations related to force management include:

- Finding CC-1: “Forward-stationed U.S. military units, elements, and facilities made critical contributions to the timeliness and effectiveness of the DoD responses to Hurricanes Georges and Mitch.” [Recommendations CC-1-1, CC-1-2, CC-1-3, CC-1-4]
- Finding CC-2: “Joint Task Forces were SOUTHCOM’s command and control method of choice to respond to Hurricanes Georges and Mitch, but significant improvements could be made in the readiness and effectiveness of JTFs as

disaster response organizations.” [Recommendations CC-2-1, CC-2-2, CC-2-3]

- Finding CC-3: “The SOUTHCOM DJTFAC deployed to facilitate the establishment of JTF Aguila headquarters following Hurricane Mitch, but it was not configured for the mission it was assigned and lacked essential capabilities.” [Recommendation CC-3-1]
- Finding CC-5: “Rapid deployment of substantial DoD assets from outside the theater, immediately after a major foreign disaster, is encumbered by numerous procedural obstacles. Because of these procedures, most U.S. forces that served in the Hurricane Mitch disaster response arrived weeks after the hurricane struck.” [Recommendations CC-5-1, CC-5-2]
- Finding LS-1: “Commanders, headquarters staffs, and JTF task units were assembled from combat support and service support force elements to respond to both Hurricanes Georges and Mitch. Pre-designation of these elements, especially the commanders and staffs, would enable them to train and exercise for these missions.” [Recommendations LS-1-1, LS-1-2]
- Finding PS-1: “During the Mitch operations, difficulties accompanied the decision to use individual augmentees, as well as the process of locating and designating them for deployment. When individuals were finally deployed, there was no joint personnel system that properly tracked individual deployments, mission status, and redeployment.” [Recommendations PS-1-1, PS-1-2, PS-1-3, PS-1-4]
- Finding RF-1: “The Hurricane Georges and Mitch operations reinforced the need for improving the timeliness, adequacy, and effectiveness of Reserve Component voluntary responses to unexpected overseas operations.” [Recommendations RF-1-1, RF-1-2]

3. The process of translating humanitarian needs encountered during disasters into U.S. military forces and capabilities to meet those needs can be improved.

Once the scope of the Hurricane Mitch damage was understood and the decision had been made at the highest levels of the USG to conduct a large-scale relief operation including the U.S. military, DoD planners and their civilian colleagues were faced with the task of translating humanitarian needs into deployable capabilities. For example, given the fact that safe drinking water was required in the affected region, and assuming a tasking to DoD, was the appropriate response on the part of the U.S. military to send bottled water via airlift, to deploy epidemiologists to test the water, to provide ROWPU teams and equipment, to send engineers to dig wells, or some combination of these assets? How much of each capability should have been deployed and how should the

assets to be deployed have been configured? Finally, which U.S. military units had the required capabilities?

Under any circumstances, and especially in the sometimes chaotic aftermath of major disasters, the process of accurately ascertaining the needs of a Honduran villager, for example, and determining whether a U.S. military asset can or should meet those needs, is complex. That process of translating assessment data into DoD capabilities is composed of several discrete steps:

- The conduct of the needs assessment
- A determination of which of the requirements would be met by DOD and which by others
- A translation of the requirements levied on DoD into military force capabilities and thence into forces
- Selection of which units or, in some cases, elements, or even individuals, that would be deployed to the AO to meet the requirements
- Initiation of the process to alert and prepare the military capabilities for deployment and the mission, and
- Movement to the AO and to the specific final destinations where the capabilities were to be applied.

U.S. military planners at supported, supporting, and subordinate commands, and at the JTF level, expended a great deal of effort to determine accurately the humanitarian needs in the affected region, and to express those requirements in terms of military capabilities to be deployed, with some success. In the main, however, DoD planners faced a gap in doctrine and tools to assist their planning efforts, relying primarily on individual experience and the application of combat planning tools to the HA/DR environment in order to arrive at military asset requirements. Although joint doctrine provides a great deal of guidance on planning processes in general, and substantial guidance on planning factors for SSCs, the complex and, for military planners, somewhat arcane procedure for translating civilian humanitarian needs into military capabilities and, ultimately, units, remains understudied.

In a disaster response environment characterized by urgency to save lives, partial information, multiple responders, and political pressure, translating needs to capabilities will be inherently complicated. The issue for DoD is how assets can be more effectively aligned with needs, to avoid if possible circumstances like the over abundance of unneeded U.S. military engineering equipment that arrived on Central American docks in

December 1998. A second issue faced by DoD is whether the procedure of translating relief needs to military assets can be done systematically, with a minimum of process costs to avoid overburdening commanders and planning staffs. During the Hurricane Mitch response, the process of assessing needs and determining which military units should and could meet those needs was an extraordinarily iterative process, requiring extensive interaction among the commands involved in the mission via telephonic, email, VTC, and other means.

There are a number of useful initiatives, approaches, tools, and models that could assist U.S. military planners to translate disaster relief needs into military capabilities. In preparing for the Hurricane Mitch response, DoD planners would have benefited from: (1) USG needs assessments that specified requirements for military capabilities, including use of humanitarian “service modules” to specify discrete military capabilities packages; (2) a consequence assessment tool permitting quantifiable estimates of civilian need; and, (3) a planning tool to define the humanitarian capabilities of U.S. military units.

1. Needs Assessments that Specify Required Capabilities: In the aftermath of Hurricanes Georges and Mitch, DoD received many requests for assistance from USG agencies, based either on assessment missions conducted by those agencies or on requests for assistance forwarded through those USG agencies by other emergency responders. In many instances, the requests were of a general nature, such as the need for water purification equipment, and failed to note whether unique military capabilities (for example, for security, rapid delivery times, trained crews, or other military capabilities) were required. In other instances, the type of assistance requested was clear, but the request failed to specify the latest arrival date (LAD), maintenance requirements or other information crucial for military planners. DoD planners, who are trained in translating military combat capability requirements into type forces, would have benefited from assessment findings that more clearly specified the types and amount of measurable capabilities that were required to meet the affected population’s needs.

The use of humanitarian service modules has become increasingly widespread among civilian relief agencies, especially within the UN system, and holds significant potential for enhancing the ability of U.S. military planners to align relief needs with military capabilities. Service modules are statements or descriptions of specific recurring requirements during relief operations, expressed in terms of capabilities that might be provided by donor nation civilian agencies or military forces. Service modules may include packages of goods, services, equipment, or skills that are frequently needed in

humanitarian assistance operations.¹² When UN or other civilian agencies express their requirements for military or other donor assistance in the precise terminology of service modules (which specify, optimally, support requirements, length of deployment, self-sustainment requirements, and other useful planning parameters), communication between civilian agencies defining requirements and military providers of capabilities is enhanced and process costs during time-critical disasters are reduced. Each package, or module, consists of established objectives, specified activities to be performed, and detailed lists of personnel, equipment, and material the package should contain. For example, recognizing that management of incoming relief supplies will be a process common to all relief operations, the UN Office for the Coordination of Humanitarian Affairs (OCHA) has defined an “airfield control” service module that would be required for future operations, and which could be provided, *en bloc*, by donor nation military forces or civilian organizations to assist in the operation.¹³ Creating a USG system of service modules, to allow translation of civilian relief needs into quantifiable packages of civilian or military capabilities, could enhance DoD’s foreign HA/DR response planning and expedite deployment, in those instances when military assets might provide the appropriate response.¹⁴

2. A Consequence Assessment Tool: Disaster consequence assessment tools, like the Consequence Assessment Tool Set (CATS) developed with funding from FEMA and DoD, provide planners with the capability to estimate damage from a range of natural phenomena. Although such tools currently have limited applicability in many disaster-prone portions of the developing world (see Findings CD-1 and CK-2 for additional

¹² Service modules are described in great detail in IDA Document D-2349, *Potential Global Partners for Smaller-Scale Contingencies* (Ref. 74). This document lists all current UN service modules.

¹³ The airfield control service module requires the donor to “Plan, schedule, and direct all activities related to the unloading, loading, and servicing of aircraft for a specific airfield on a 24-hours-per-day basis; oversee activities of local contractors or Airfield Ground Handling Team; coordinate with UN Air Planning Center, Flight Operations Center, Movement Control Team, and host nation authorities and humanitarian organizations; be prepared to assist with airfield security.”

¹⁴ The discussion of humanitarian service modules in this section is not intended to suggest that U.S. military forces or other national military forces should provide a greater share of the relief services than they currently do, in the aftermath of foreign natural disasters. Many existing civilian agency capabilities, located within the UN system, IOs, or NGOs, should be called upon initially to deliver water, food, shelter, or health care to disaster victims, and should not be routinely supplanted with military assets. Rather, the real value of service modules is the common terminology they provide and their use as a planning tool. Delineation of recurring relief capacities in service module language facilitates expedited provision of military assets in those limited instances where civilian agency capacity is insufficient and must be supplemented by military equipment and/or personnel.

discussion), their potential as a planning tool was not utilized during the foreign disaster operations in fall 1998. Few military planners are currently aware of their capabilities.

3. Planning Tools to Define Unit Capabilities: The Joint Electronic Battlebook (JEB), a planning tool maintained by USJFCOM, provides information on selected unit capabilities and non-unit supply or equipment assets available through DoD sources. Its purpose is to provide readily available information on unit capabilities, equipment, and supply assets to U.S. military planners – an important capability when planning for rapid-onset foreign disasters. However, the current JEB does not organize data in a format – akin to service modules – that is most useful to planners preparing for disaster relief operations. Moreover, most military planners interviewed for this study were not familiar with the capability or operation of the JEB.

The Hurricane Georges and Hurricane Mitch experiences suggest that greater attention to the process and tools for translating disaster assessment data into military unit capabilities should be a DoD priority. Findings related to determination of force requirements include:

- Finding AI-2: “Additional interagency coordination is required to define more clearly the goals and objectives of USG assessment teams, and to standardize reporting formats.” [Recommendations AI-2-1, AI-2-2]
- Finding AI-3: “In order to guide the USG disaster response effectively, DoD and other USG post-disaster assessment teams should be trained in assessment skills, should be ready to be dispatched to the affected areas immediately, should receive transport support to and within affected areas, and should report promptly. In addition, assessment support should be provided to USG personnel – military and civilian – already in the affected areas, who will often be able to provide initial, preliminary assessment information.” [Recommendations AI-3-1, AI-3-2, AI-3-3]
- Finding CD-1: “The process for identifying, selecting, and deploying the right DoD capabilities for Hurricane Mitch was complex and demanding. The process of translating humanitarian needs into force requirements during disaster operations can be improved.” [Recommendations CD-1-1, CD-1-2, CD-1-3, CD-1-4, CD-1-5]
- Finding CK-2: “Models to predict the full extent of storm damage comparable to that caused by Hurricane Mitch are not currently available. Such models would assist USG civilian and military planners with anticipating the severity of these storms and the types of responses that will be required when disasters occur.” [Recommendations CK-2-1, CK-2-2]

- Finding IS-2: “Many disaster-prone regions are assigned low priority for imagery, mapping, and other information product support, potentially limiting the effectiveness of disaster relief operations.” [Recommendation IS-2-1]
- Finding LS-2: “During Hurricane Georges, SOUTHCOM was required to respond simultaneously to two separate and different USG management systems to provide support to civilian authorities during domestic and foreign disasters. Requests for assistance, funding, and other procedures for these operations can be standardized to minimize differences.” [Recommendations LS-2-1, LS-2-2, LS-2-3, LS-2-4]

4. DoD's coordination with multiple responding entities can and should be substantially improved, both in the U.S. military's overall approach to disaster response operations and, specifically, at the scene of a foreign disaster.

The ability of the JTF to work with all organizations and groups is essential to mission accomplishment. A relationship must be developed between military forces, USG agencies, civilian authorities, involved international and regional organizations, NGOs and PVOs [private voluntary organizations], and the population. Joint Pub 3-08, *Interagency Coordination During Joint Operations* (Ref. 59)

Instead of thinking about warfighting agencies [sic] like command and control, you create a political committee, a civil-military operations center – CMOC – to interface with volunteer organizations. These become the heart of your operations, as opposed to a combat or fire support operations center. Gen. A.C. Zinni, USMC (Ret) (Ref. 59)

Joint doctrine is clear on the need to work cooperatively with the range of civilian agencies that respond to a crisis (Refs. 59-64). Joint doctrine enumerates the types of organizations likely to arrive at a disaster scene, and elaborates the range of mechanisms, such as CMOCs, that can facilitate coordination among disparate relief entities. The Findings and Recommendations compiled for this study suggest that this principle of coordination with civilian relief agencies, while not violated during Hurricane Georges and Mitch operations, was treated as an ancillary rather than central portion of the disaster relief operations. A focus on civil-military relations was not, to use Gen. Zinni's phrase, at the heart of DoD hurricane disaster relief operations in 1998.

As reported above, substantial USG and other civilian relief resources were brought to bear during Hurricane Georges and virtually the entire international relief community responded to Hurricane Mitch. The “total force” responding to the disaster included host nation government and private organizations, UN agencies, international organizations like the Red Cross, regional organizations like the Pan-American Health

Organization (PAHO), military and civilian agencies of donor governments (France, the UK, the Netherlands, Cuba, Japan, and others), numerous NGOs, and for-profit companies, as well as U.S. military and civilian assets. Based on research conducted for this study, however, U.S. military commanders had limited visibility of the "total force" committed to the disaster response, and little awareness of how U.S. forces might supplement, as opposed to replace, international civilian assets likely to be dispatched to the response effort.

For example, U.S. military planners and commanders evinced limited awareness of the UN system for responding to, managing, or mobilizing resources for disaster response or rehabilitation programs. Although limited UN assets were available on-scene in the immediate aftermath of Hurricane Mitch, substantial UN-generated resources were potentially available for programs like water purification and medical care during the rehabilitation phase of Hurricane Mitch operations. Operating from a "total force" perspective, U.S. military planners might have invested more effort in determining what UN and other civilian relief efforts would be deployed to the region in the weeks and months after the storm struck, and planned the deployment of DoD assets to supplement civilian assets. If U.S. military planners had operated with this "total force" approach – an approach requiring a significant cultural change within the U.S. military and substantial training in civilian capabilities at Joint and Service schools and exercises – significant cost and logistics savings to DoD might have resulted.

Limited strategic coordination between U.S. military forces and the international civilian relief community was reflected at the tactical level in coordination problems within the AO. At the country level, civilian-military coordination could have been much improved. Attempts at coordination took place at multiple venues, as often happens amid the chaos of relief operations. As illustrated in Figure III-3, relief agencies met and coordinated, to one degree or another, in at least five types of locations:

- The host nation emergency operations center (EOC) established by the government of the affected country. These EOCs – which were operated by civilian agencies, the host nation military, or both – varied widely as to competency, but generally had large attendance from international relief community representatives
- The U.S. embassy, including MILGP operations centers and USAID offices. Given its prominent role in most Central American countries, the U.S. embassy was a logical gathering point and locus for information exchange for many participating relief agencies

- Other nations' embassies also were the sites for coordination meetings attended by various representatives of the international relief community. In El Salvador, for example, the Canadian Ambassador held coordination meetings that the U.S. Ambassador cited as an excellent source of information
- UN offices, maintained by UN agencies resident in the affected countries, were also the site of coordination meetings, although these were less prominent in Central America than in many conflictive humanitarian crises around the world. In Honduras and El Salvador, the UN Development Programme organized these coordination centers
- Aerial ports of debarkation (APODs), like the international airports in Managua and Tegucigalpa, became *de facto* coordination locations. Civilian, military, government, and NGO representatives gathered at these sites to coordinate incoming relief flights and other operational issues.

Notably absent from the indicative system outlined in Figure III-3, and from the actual humanitarian relief architecture in the four most seriously affected nations, was a central, universal humanitarian operations center, or HOC, established by the international community during the relief phase of operations as the coordination, validation, and prioritization point for all responding humanitarian organizations. Nor was a CMOC or other formal civil-military coordination center created by JTF Bravo during this phase of the operations.¹⁵

¹⁵ JTF Aguila created CMOCs in El Salvador, Guatemala, and Nicaragua once it deployed to these areas, but these coordination centers were not successful for several reasons. First, since the JTF did not become fully operational until 6 weeks after the disaster struck, most NGOs, IOs and other civilian disaster responders had completed operations or had established other coordination mechanisms or linkages by that time. Second, after being established by Army Civil Affairs personnel, the CMOCs were staffed by Reserve officers on frequent rotation, leaving civilian responders with the belief that the CMOC was not a high priority operation. Third, in some cases the CMOCs were established away from locations where international relief agencies were centered, creating the impression that participation by these civilian agencies was not a priority.

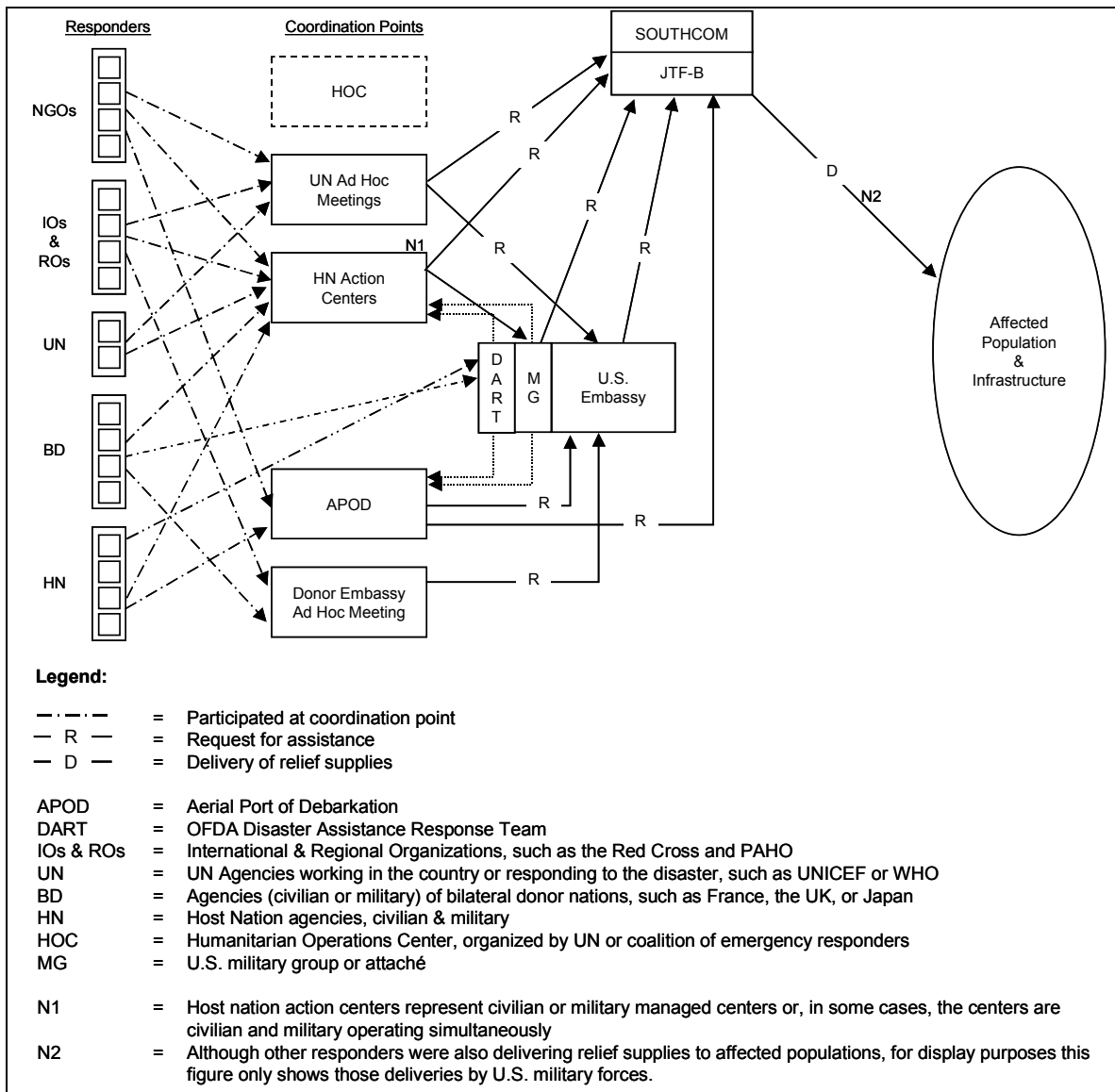


Figure III-3. Indicative Tactical Civilian-Military Coordination During Emergency Phase – Hurricane Mitch

It would be unfair to suggest that no coordination took place between U.S. military personnel assisting with Hurricane Mitch and international civilian relief agencies. Clearly, informal liaison took place at numerous locations described in Figure III-3 and MILGP officers, through great personal effort, attempted to cover the major coordination locations, while serving as an intake point for requests for assistance (RFAs) from all sources to the U.S. military. However, the fact that JTF Bravo was remote from the center of civilian humanitarian coordination in Tegucigalpa, not to mention from San Salvador, Guatemala City, and Managua (before JTF Aguila was established), placed extraordinary burdens on MILGP personal to serve as *ad hoc*, roving CMOCs. Many of

the MILGP officers who played such prominent roles in shaping the initial disaster relief effort were either not fully familiar with the disaster roles of IOs and NGOs, or assigned a higher priority to liaison with host nation relief officials. The result was a patchwork of civilian-military coordination during the relief phase. RFAs from the various civilian coordination centers reached JTF and geographic combatant command (GCC) headquarters without having been thoroughly coordinated and vetted through a CMOC, and a perception was created in the minds of many civilian responders that DoD forces neither overtly sought coordination with civilian relief agencies, nor created effective mechanisms to facilitate coordination.¹⁶

Figure III-4 illustrates the appropriate role of a CMOC, presumably a CMOC attached to a disaster response JTF. In instances when the civilian relief community has established a formal HOC, CMOC personnel may be co-located at the HOC, attend HOC coordination sessions, or conduct periodic meetings with the HOC. In cases like Hurricane Mitch, where the scale of the disaster or the requirement for immediate, *ad hoc* coordination leads to the evolution of multiple civilian coordination centers, CMOC personnel may have to establish liaison with numerous such centers. In either case, the CMOC or similar entity should serve as the single intake, analysis, validation, prioritization, and transfer point for information or RFAs coming from the civilian relief community, as well as the communications point back to that humanitarian community.

¹⁶ It is not the intent of this analysis to suggest that MILGP officers performed liaison responsibilities inadequately. On the contrary, the civilian-military liaison system in the early stages of the disaster response, to the extent it performed well, relied almost exclusively on MILGP personnel. As noted in this study's Findings and Recommendations, if MILGP or other security assistance organizations (SAOs) are expected to perform this function in the absence of a CMOC or other formal coordination center, additional training and resources should be provided to SAO staff.

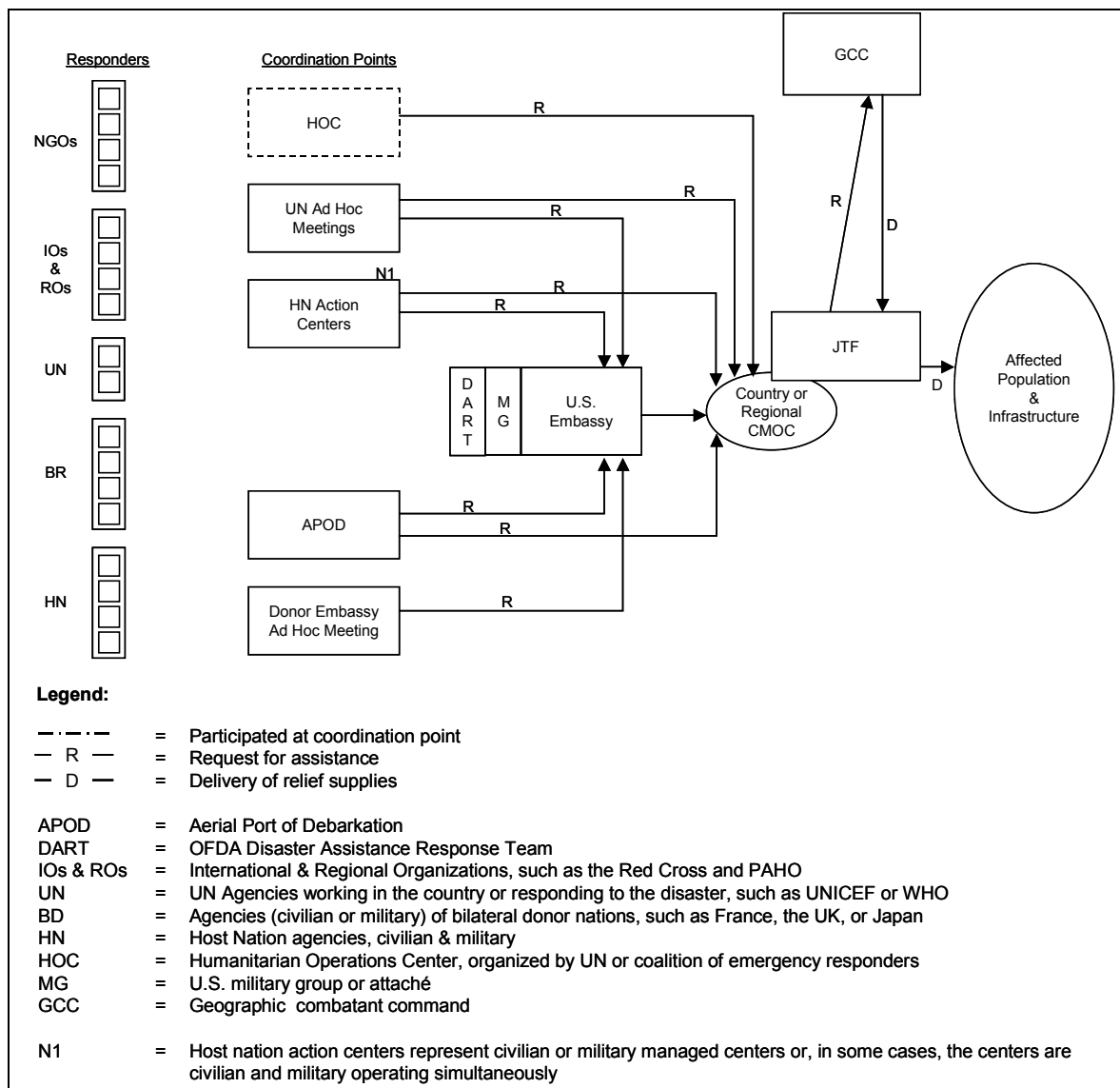


Figure III-4. Model for Civilian-Military Coordination during Foreign Natural Disasters – Role of the CMOC

CMOCs are not a panacea for civilian-military relations during a crisis. The establishment of a coordination center by foreign military forces operating in another nation's territory may cause some discomfort within the host nation, and this perception should be given due weight. Or, in cases where CMOC and HOC functions become indistinct, NGOs and other civilian relief providers may perceive that U.S. military forces are creating in the CMOC a management structure intended to dominate, rather than coordinate with, civilian agencies. Under no circumstances should the creation of a CMOC or any other U.S. military coordination mechanism undercut efforts by the host nation to coordinate the disaster response through its own EOC. These legitimate

concerns notwithstanding, an important issue emanating from the Hurricane Mitch experience is the essentiality of devoting focused, visible resources to civilian-military coordination efforts in the early stages of rapid-onset foreign natural disasters.¹⁷ Ensuring that greater prominence is given to such coordination structures in future disaster assistance should be an important issue for DoD.

Findings and Recommendations related to civilian-military coordination during relief operations include:

- Finding CH-1: “During Hurricane Mitch, DoD and other USG officials in the affected countries made efforts to ascertain the assistance priorities of the affected governments. However, USG responders sometimes interfaced with different agencies of the host nation governments, leading to inconsistent analyses of host nation needs and priorities. U.S. military forces at the disaster scene sometimes gravitated to local military organizations as contact points, potentially diminishing the role of local civilian agencies.” [Recommendations CH-1-1, CH-1-2, CH-1-3]
- Finding CH-5: “U.S. military commanders tasked with disaster assistance missions should allocate time and resources for information exchange with local communities and local leaders. Information exchange can facilitate assessment, improve the relief effort, build trust within local populations, and enhance force protection.” [Recommendation CH-5-1]
- Finding CN-1: “DoD coordination with donor nations¹⁸ offering assistance, including their military forces, was not effectively accomplished during the Hurricane Mitch response. Absence of standardized coordination frameworks and, to a lesser degree, gaps in USG doctrine contributed to this problem. Several models of donor nation coordination merit examination.” [Recommendations CN-1-1, CN-1-2]
- Finding CN-2: “U.S. military forces, whether at geographic combatant command headquarters or in the field, had little knowledge of UN personnel, support systems, or coordination mechanisms operating in the affected

¹⁷ It is important that CMOC or similar coordination mechanisms be established early in the disaster response operations, in order to build confidence and establish timely links with civilian agencies. One approach to initiating civilian-military liaison during rapid-onset disasters would be to assign MILGPs or other U.S. military personnel present at the U.S. embassy the responsibility of establishing a proto-CMOC, pending the arrival of JTF staff. This approach has been adopted in SOUTHCOM's Humanitarian Assistance and Foreign Disaster Relief FUNCPLAN of 15 October 1999.

¹⁸ By “donor nations” or “bilateral donors,” this study refers to those countries, other than the United States or the affected country itself, that may contribute assets to the disaster relief efforts. Donor nations can include neighbors of the disaster-affected nation or countries outside the region that contribute relief supplies or forces. Contributions of donor nations may be made directly to the affected country or funneled through UN, IGO, IO, or NGO intermediaries.

countries during the Mitch relief effort.” [Recommendations CN-2-1, CN-2-2]

- Finding CN-4: “Contact between U.S. military forces and non-governmental organizations (NGOs) operating in the Hurricane Mitch AO ranged from close cooperation to absence of contact, but was mainly characterized by sporadic, non-systematic interaction. Many DoD personnel providing assistance in Central America evinced limited knowledge of the nature and scope of NGO operations.” [Recommendations CN-4-1, CN-4-2, CN-4-3, CN-4-4]
- Finding CN-5: “The Hurricane Mitch response reflected a substantial breakdown in the application of DoD doctrine on Civil-Military Operations Centers (CMOCs). Formal structures for coordination between U.S. military forces and non-USG civilian relief agencies did not, by and large, achieve significant synergy.” [Recommendations CN-5-1, CN-5-2, CN-5-3, CN-5-4]
- Finding MS-4: “During the Hurricane Mitch response, DoD medical personnel appropriately recognized the capabilities of host nation and regional health care professionals. Linking DoD medical units and personnel with civilian health care providers, between disasters and during the early stages of the disaster response, improves the quality and sustainability of health care for disaster victims.” [Recommendations MS-4-1, MS-4-2]

5. Effective, timely response to large-scale, rapid-onset disasters demands more reliable funding mechanisms, within DoD and within the USG interagency system.

A critical requirement for launching an effective, timely USG response to disasters is the assurance that legislative authority and financial resources will be available to support the mission. As currently structured, the interagency system does have sufficient overall resources to meet probable overseas relief needs, but insufficient contingency plans exist for how, and under what conditions, those resources will be made available for DoD or other USG disaster response operations. Interagency uncertainty during the early stages of the Mitch response over who would cover the costs of relief efforts likely contributed to delays in the USG response, and certainly bred a degree of confusion in the interagency planning process. The Findings and Recommendations section of this report argues for more reliable funding mechanisms for overseas disaster response.

As described earlier in this study, DoD expended approximately \$145 million of its own resources during the Emergency Relief Phase and Rehabilitation Phase of the

Hurricane Mitch response. Other USG agencies expended approximately \$150 million during the same time period for relief or rehabilitation programs.¹⁹ Congressional supplemental appropriations measures ultimately reimbursed agencies for virtually all these expenditures, although that fortuitous outcome was not guaranteed when federal officers had to commit funds in the immediate aftermath of Mitch.

For civilian agencies, Hurricane Mitch expenditures were sizeable, but did not constitute a crippling drain on available resources. For example, the International Disaster Assistance (IDA) account on which OFDA draws for disaster relief operations contributed about \$30 million to Mitch assistance out of a FY1998 appropriations level of \$190 million.²⁰ But for DoD, the combination of CINC Initiative Funds, OHDACA, and Emergency Drawdown Authority contributed to Mitch relief efforts constituted virtually all available humanitarian assistance authorities and resources the Department could muster [See Table II-6]. As outlined above, tapping these three funding sources sapped other high priority DoD programs like humanitarian demining and might have denigrated force readiness if Congress had not reimbursed DoD expenditures. Ten million dollars of IDA funds were made available to support DoD operations after Mitch, but DoD had no method for compelling the expenditure of any additional IDA funds, despite guidance from the NCA to increase the level of relief operations. OFDA, on its part, was not inclined to provide additional funds for U.S. military relief efforts that it had not requested and which may have seemed to OFDA, in some instances, unnecessary.²¹

It is likely that one or more disasters requiring expenditures on the same order of magnitude as Hurricane Mitch will occur in coming years. It is even more likely that one or more disasters demanding a combined USG civilian and military response will take place in the near future. Given these probabilities, a significant issue facing the USG is

¹⁹ It is difficult to compute the relative value of these two levels of expenditure in terms of relief supplies or services actually delivered in Central America. DoD expenditures include all costs for services provided for its personnel (such as medical facilities deployed to the AO), transport, and materiel. USG civilian expenditures are largely either the cost of commodities purchased and shipped, or the value of grants made to non-profit organizations. Some estimates are that DoD services during disaster operations may be up to ten times as expensive as comparable civilian programs (Ref. 64), due in part to much higher personnel support costs.

²⁰ The IDA account provides resources for humanitarian assistance worldwide, for both natural and man-made disasters, and also supports the programs of USAID's Office of Transition Initiatives, which operates to restore services in post-conflict situations.

²¹ Some USG civilian disaster responders interviewed for this study, including OFDA personnel, both expressed appreciation for DoD efforts during the Disaster Relief Phase of the mission and questioned whether the Rehabilitation Phase, as advanced by DoD in the interagency system, was necessary or cost-effective.

how to rationalize the expenditure of all available agency financial resources available for foreign disasters. This study suggests that two avenues should be explored by DoD policymakers to ensure that sufficient funds are available to support U.S. military missions when they are next ordered by the NCA, without stripping funds from competing program priorities. The first avenue is to seek a dedicated funding pool within the DoD budget for disaster relief operations, as an addition to current operating funds. Rejuvenating the currently moribund Disaster Emergency Response Fund (DERF)²² or its equivalent would be one approach to creating this funding pool.

A second approach for DoD policymakers is to seek, within the USG interagency system, a plan for allocating IDA funds to the support of foreign disaster operations mandated by the NCA in a more predictable fashion. Specifically, this study recommends that, in the early stages of the USG's response to a foreign disaster, when time is of the essence, that IDA funds be made available to fund or reimburse all authorized disaster relief initiatives by all federal agencies, until a consolidated interagency funding plan can be agreed upon. This approach should eliminate any delay or hesitancy to commit critical emergency supplies or services, such as SAR missions, when lives are at stake. Although other options might be available to ensure sufficient USG funding to jumpstart disaster relief activities following a rapid-onset foreign disaster, it is clear that the current system does not permit the degree of flexibility and interagency coordination required.

In the longer term, USG departments and agencies should work toward a unified, consistent approach to the funding of foreign natural disasters based on the principle that the committing authority provides a fund cite at the time that DoD or other USG agencies are tasked with a disaster response mission. Currently, the U.S. domestic disaster response system provides a simple, consistent approach to tasking and funding decisions: when FEMA tasks DoD or another USG agency, the tasked entity can expect full reimbursement from FEMA. This straightforward approach should be adopted for USG foreign disaster operations, as well.

Findings and Recommendations related to budget issues include:

- Finding FO-1: "DoD had not previously used the combination of funding authorities employed to fund Hurricane Mitch operations, and that funding

²² Public Law 103-13 permitted the use of the Emergency Response Fund (created by Public Law 101-165) for "expenses of the Department of Defense which are incurred in supplying supplies or services furnished in response to natural or manmade disasters."

package required trade-offs in DoD programs. Future disaster relief operations would benefit from improved funding mechanisms.”
[Recommendations FO-1-1, FO-1-2, FO-1-3, FO-1-4, FO-1-5]

C. ADDITIONAL FINDINGS ON DOD FOREIGN DISASTER RELIEF OPERATIONS, SYSTEMS, AND CAPABILITIES

Most Findings and Recommendations generated by this study did not relate directly to one of the five major issues described above. However, many contain important information relating to DoD’s conduct of foreign HA/DR operations, as reflected in the 1998 hurricane relief operations. Findings not directly related to the five policy issues addressed above, organized by research category, are listed in Table III-3. The Discussion and Recommendations related to these Findings are located in Appendix B.

Table III-3. List of Study Findings

ASSESSMENT ISSUES (AI)
FINDING AI-4: Developing an overall picture of storm damage in the SOUTHCOM AOR in the immediate aftermath of Mitch was a significant challenge. In general, within DoD, post-disaster assessment data were not always shared with all commands, staffs, and units that required those data.
COMMAND AND CONTROL (CC)
FINDING CC-6: DoD search and rescue (SAR) operations saved many lives in the immediate aftermath of Hurricane Mitch, in part because of the unique environment of that operation (such as SAR assets stationed in or near the AO). Similar circumstances may not prevail in most foreign disasters.
FINDING CC-7: Air operations in the SOUTHCOM area of responsibility accelerated rapidly in the aftermath of Hurricane Mitch, generating complex command and control issues. Overall coordination of air operations in the area would have benefited from early, pro-active involvement by SOUTHAF, the air component of SOUTHCOM, for management of air operations.
DOD INTERNAL COORDINATION (CD)
FINDING CD-2: During responses to both Hurricane Georges and Hurricane Mitch, critical transport operations to resupply forward staging bases were canceled in order, in theory, to free assets for relief operations. Without adequate supplies, forward staging bases were unable to support relief operations.
FINDING CD-3: HA/DR operations often require capabilities that are retained by the Military Departments to perform functions assigned under the U.S. Code, and these capabilities are not generally visible to the unified combatant commands.

Table III-3. List of Study Findings (cont'd)

INTERFACE WITH HOST NATIONS (CH)	
FINDING CH-2:	During Hurricane Mitch operations, officials in affected nations appreciated the deployment of substantially self-supporting disaster response units by the U.S. military, which reduced host governments' burden to support the responders.
FINDING CH-3:	Between crises, DoD support can strengthen local disaster response and preparedness activities in countries with a history of natural disasters, as SOUTHCOM did prior to and after Hurricane Mitch. DoD support should be linked with the efforts of other USG agencies.
FINDING CH-4	Large-scale natural disasters such as Hurricane Mitch have major political implications, as well as humanitarian impacts, in the affected nations. During the hurricanes in SOUTHCOM's AOR in fall 1998, the geographic combatant command and U.S. forces deploying to the AO confronted operational decisions with significant political implications within the host countries. Insufficient attention to these issues – which are likely to surface in future DoD responses to major, rapid-onset natural disasters – could have led to foreign policy or media relations difficulties, complicating the primary mission: meeting the relief needs of storm victims.
COMMUNICATIONS AND COMPUTERS (CK)	
FINDING CK-1:	Command, Control, Communications and Computers (C4) were critical to the success of the HA/DR response for both Hurricanes Georges and Mitch, but relief operations revealed a number of systemic issues that face U.S. military units during such disaster relief operations. C4 planning and implementation to address these gaps were not sufficiently comprehensive or integrated.
INTERFACE WITH NON-USG ORGANIZATIONS/GOVERNMENTS (CN)	
FINDING CN-3:	The management of regional catastrophes, like Hurricane Mitch, is inherently complex. Regional disaster assistance organizations can play a variety of roles in disaster preparedness and mitigation, though none is capable of fully managing a high magnitude crisis. DoD liaison with and support for regional organizations, prior to a disaster, can pay dividends.
FINDING CN-6:	After Hurricanes Georges and Mitch, as in the aftermath of most natural disasters, private sector capabilities were available to supplement the relief effort.
DOCTRINE AND PROCEDURES (DP)	
FINDING DP-1:	DoD commanders and staff adopted a wide variety of approaches to hurricane disaster response operations in fall 1998, reflecting in part the absence of a consolidated doctrinal document on foreign HA/DR operations.
FINDING DP-2:	Better use can be made of disaster relief “measures of effectiveness” (MOEs) – especially quantifiable MOEs – for mission and redeployment planning.
FINDING DP-3:	USG policy must be clarified on whether DoD assistance can be used to evacuate threatened host nation populations prior to the occurrence of a foreign natural disaster.
ENGINEERING SUPPORT (ES)	
FINDING ES-1:	U.S. military engineer units accomplished effectively the HA/DR tasks they were assigned during the Hurricane Mitch response. In order to complete their assigned missions, commanders were required to (1) coordinate project selection with relevant host nation and USG officials, and (2) ensure the timely arrival of critical equipment at the project site.

Table III-3. List of Study Findings (cont'd)

<p><u>FINDING ES-2:</u> Following Hurricane Georges and Hurricane Mitch, officials of affected territories or nations requested that U.S. military units provide and install substantial numbers of replacement bridges – requests that far exceeded DoD on-hand capacity. In some instances, officials made specific requests for Bailey Bridges, based on very limited knowledge of U.S. military assets. Since such requests are likely in future disasters, active management both of limited bridge assets and information on those assets is required.</p>
<p>FORCE PROTECTION (FP)</p>
<p><u>FINDING FP-1:</u> Landmines and unexploded ordnance (UXO) were a potential threat to relief operations after Hurricane Mitch. When rapid-onset natural disasters strike foreign nations that have experienced warfare in recent times, landmines and UXO surfaced by natural phenomena may pose a threat to local inhabitants, relief workers, and/or DoD personnel.</p>
<p><u>FINDING FP-2:</u> Force protection was a priority during Hurricane Mitch Operations for military commanders tasked with HA/DR missions. Commanders' emphasis on protecting the force limited the impact of disaster relief operations.</p>
<p>HUMANITARIAN OPERATIONS; NON-ENGINEERING, NON-MEDICAL (HO)</p>
<p><u>FINDING HO-1:</u> DoD planners and commanders generally followed sound humanitarian principles while conducting relief missions following Hurricane Mitch, but operations could be strengthened by incorporating state-of-the-art humanitarian practices in U.S. military doctrine.</p>
<p><u>FINDING HO-2:</u> Post-disaster DoD operations in disaster-prone countries can help mitigate future disasters and limit the requirement for major relief efforts.</p>
<p><u>FINDING HO-3:</u> Searching for and evacuating U.S. nationals was a high priority after Hurricanes Georges and Mitch, and DoD assets were requested for this purpose. This mission is likely to be assigned following future foreign disasters.</p>
<p><u>FINDING HO-4:</u> Hurricane Mitch illustrated the complexity of food relief operations after rapid-onset natural disasters, and this factor requires close coordination by DoD with other interagency participants.</p>
<p>HELICOPTER SUPPORT (HS)</p>
<p><u>FINDING HS-1:</u> At the tactical level, the most valuable contribution of the U.S. military to the response for Hurricanes Georges and Mitch was helicopter capability. The utility of, and demands on, helicopter assets were so great that (1) establishing priorities for their employment, (2) determining their optimal operating tempo (OPTEMPO), and (3) ensuring adequate funding for helicopter operations became significant issues for commanders.</p>
<p>INFORMATION SUPPORT (IS)</p>
<p><u>FINDING IS-1:</u> DoD's use of open, unclassified procedures facilitated interagency and international coordination during Hurricane Mitch operations. Working in an unclassified environment – when consistent with national security considerations – should be the first option for DoD in similar HA/DR operations in the future.</p>

Table III-3. List of Study Findings (cont'd)

LEGAL AFFAIRS (LA)
<p><u>FINDING LA-1:</u> During Hurricane Mitch operations, the JTF commanders and staff were confronted with a number of legal issues between the USG and the host nations that had to be managed quickly to allow relief operations to proceed. Commanders assigned HA/DR missions in the future will likely confront similar sets of international legal issues.</p>
<p><u>FINDING LA-2:</u> Early deployment of legal personnel with the disaster response JTFs, and involvement of legal personnel in the early stages of planning relief operations, would have improved Hurricane Mitch operations. Such early engagement is likely to contribute to the success of future disaster relief operations.</p>
LOGISTICS SUPPORT (LS)
<p><u>FINDING LS-3:</u> During Hurricane Mitch operations, SOUTHCOM's exercise of Directive Authority for Logistics (DAFL) over forces placed under its operational control caused funding problems. The doctrine on DAFL requires clarification.</p>
<p><u>FINDING LS-4:</u> Many of the relief supplies and some of the emergency support provided by civilian and military sources during Hurricanes Georges and Mitch were standard materiel required in most disaster relief operations. Identification of the types of supplies, and plans for warehousing and transporting them to the scene of the disaster, as well as pre-positioning key disaster response teams, would expedite future foreign disaster relief efforts, especially when confronting rapid-onset disasters such as Hurricanes Georges and Mitch.</p>
<p><u>FINDING LS-5:</u> DoD's response to Hurricanes Georges and Mitch reinforced the importance of logistics support for any military operation, but especially during disaster relief operations. These efforts highlighted key shortcomings in logistics support that are likely to occur in future operations, unless organizations take steps to address them prior to deployment.</p>
<p><u>FINDING LS-7:</u> The Supply Management (SUMA) software package developed by the Pan-American Health Organization (PAHO) was widely utilized by civilian agencies during the Hurricanes Georges and Mitch relief operations. SUMA offers the potential for streamlining civilian relief operations, improving accountability, and reducing the burden on DoD support requirements.</p>
TRANSPORTATION AND MOVEMENT CONTROL (LT)
<p><u>FINDING LT-1:</u> U.S. military strategic airlift and sealift operations met the requirements of the 1998 hurricane relief operations, but many improvements could be made in the effectiveness and efficiency of strategic transportation operations, especially coordination between TRANSCOM and its interagency and DoD customers.</p>
<p><u>FINDING LT-2:</u> Execution of the theater portion of transportation requirements involved many organizations that had little pre-crisis experience working together. These operations went well, but valuable lessons were identified that have application to similar contingencies in the future, especially planning for Reception, Staging, Onward Movement, and Integration (RSOI) during HA/DR operations and the organizations and procedures used to manage theater airlift.</p>
MEDICAL SUPPORT (MS)
<p><u>FINDING MS-1:</u> In terms of training, configuration, supplies and language skills, the organization of DoD medical units during Hurricane Mitch operations was not optimized for providing disaster assistance to local populations. Significant enhancements would result from investing in disaster response capabilities, without diminishing the primary job of medical units: caring for U.S. forces.</p>

Table III-3. List of Study Findings (cont'd)

FINDING MS-2: U.S. military forces deployed to Central America did not in general require intensive psycho-social assistance during the Hurricane Mitch relief effort. However, psychological assistance, combat stress or similar teams may be required after natural disasters in the future, both to assist U.S. forces and counsel local populations.
FINDING MS-3: DoD veterinary units were a useful supplement to relief efforts during Hurricane Mitch operations. Their work with disaster victims' livestock helped the process of transition from relief delivery to recovery and self-sufficiency.
PUBLIC AFFAIRS (PA)
FINDING PA-2: The arrival of large numbers of distinguished visitors (DV) or very important persons (VIPs), from the USG, the United States, or abroad, complicated disaster relief operations in the immediate aftermath of Hurricane Mitch. Given the media and public interest in large-scale disasters, commanders tasked in the future with disaster missions should anticipate the arrival of DV/VIP contingents in the disaster AO.
PERSONNEL SUPPORT (PS)
FINDING PS-2: Individuals who participated in Hurricane Mitch operations maintained high morale, both because of DoD attention to personnel support systems and job satisfaction from assisting victims.
SPECIAL OPERATIONS (SF)
FINDING SF-1: Rapidly deploying Special Operations Forces (SOFs) saved lives during the initial Emergency Phase of Mitch operations and facilitated the JTF operations during the Rehabilitation Phase.

D. CONCLUSION

Hurricanes Georges and Mitch made the 1998 Atlantic hurricane season memorable. September and October of that year were tragically memorable for the storms' victims in the Caribbean and Central America, but also memorable for the massive humanitarian effort that accompanied the double tragedy. U.S. military personnel were important participants in that humanitarian effort. DoD personnel continued a legacy of saving lives and reducing human suffering for citizens of neighboring countries, during the relief and rehabilitation stages following the storms.

By carefully examining and analyzing the experiences of U.S. military personnel during that period, this study attempts to add to the humanitarian legacy of Operation Full Provider and Operation Strong Support. Distilling lessons from the chaos and conflicting viewpoints of disaster response operations is always a difficult task, especially when diverse measures of effectiveness guide operations. These difficulties notwithstanding, this study provides concrete data and operational guidance that are likely to be useful to DoD planners and commanders when disaster next strikes.

Unbiased interpretation of the operational data, and generation of useful Findings and Recommendations to be applied to future disaster response missions would be a worthy tribute to the victims of Hurricanes Georges and Mitch and to those who attempted to assist them.

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APPENDIX A

ACRONYMS

APPENDIX A

ACRONYMS

24 OG	24 th Wing Operations Group
ACOM	U.S. Atlantic Command
ADRA	Adventist Development and Relief Agency
ADVON	Advanced Echelon
AFFOR	Air Force Forces
AFSC	Armed Forces Staff College
AHMS	Automatic Handling Message System
AMC	Air Mobility Command
AME	Air Mobility Element
AMEMB	American Embassy
AMWC	Air Mobility Warfare Center
AO	Area of Operation
AOR	Area of Responsibility
APOD	Aerial Port of Debarkation
APOE	Aerial Port of Embarkation
ASD	Assistant Secretary of Defense
ASETF	Air and Space Expeditionary Task Force
ATC	Air Traffic Control
BHR	Bureau for Humanitarian Response
C2	Command & Control
C4	Command, Control, Communications, & Computers
C4S	Command, Control, Communications, & Computers Systems
CAC	Crisis Action Center
CALL	Center for Army Lessons Learned
CARE	Cooperative for Assistance and Relief Everywhere
CARILEC	Caribbean Electric Utility Services Corporation
CAT	Crisis Action Team
CATS	Consequence Assessment Tool Set
CDB	Caribbean Development Bank
CDERA	Caribbean Disaster Emergency Response Agency
CDRU	Caribbean Disaster Response Unit
CENTAM	Central America
CEPREDENAC	Coordination Center for the Prevention of Natural Disasters in Central America
CFST	Coalition Forces Support Team
CHOP	Change of Operational Control

CIA	Central Intelligence Agency
CIF	CINC Initiative Funds
CINC	Commander-In-Chief
CINCLANTFLT	Command-In-Chief, U.S. Atlantic Fleet
CINCPACFLT	Commander-In-Chief, U.S. Pacific Fleet
CINCSO	Commander-In-Chief, U.S. Southern Command
CINCSOC	Commander-In-Chief, Special Operations Command
CINs	Cargo Increment Numbers
CJCS	Commander, Joint Chiefs of Staff
CJTF	Combined Joint Task Force
CJTF	Commander Joint Task Force
CLAMO	Center for Law and Military Operations
CMC	Commandant of the Marine Corps
CMOC	Civil-Military Operations Center
CNO	Chief of Naval Operations
COCOM	Combatant Command Authority
CODEL	Congressional Delegation
COEN	National Emergency Committee, El Salvador
COMNAVSO	Commander, Naval Forces Southern Command
COMWESTHEMGRU	Commander, Western Hemisphere Group
CONCAP	Construction Capabilities Program Contract
CONOPS	Concept of Operations
CONPLAN	Operation Plan in Concept Format
CONRED	Committee for the Reduction of Disasters, Guatemala
CONUS	Continental United States
COPECO	Permanent Commission for Contingencies, Honduras
CRS	Catholic Relief Services
CSA	Chief of Staff, United States Army
CSAF	Chief of Staff, United States Air Force
CSCD	Combat Stress Control Detachment
CSH	Combat Support Hospital
CWS	Church World Services
DAFL	Directive Authority for Logistics
DAO	Defense Attaché Office
DART	Disaster Assistance Response Team
DASD	Deputy Assistant Secretary of Defense
DATT	Defense Attaché
DCE	Defense Coordinating Element
DCO	Defense Coordinating Officer
DEPOD	Deployment Order
DERF	Disaster Emergency Response Fund
DIA	Defense Intelligence Agency
DIRMOBFOR	Director of Mobility Forces
DJTFAC	Deployable Joint Task Force Augmentation Cell
DLA	Defense Logistics Agency

DMT	Defense Management Team or Disaster Management Team (U.N.)
DoD	Department of Defense
DOMS	Director of Military Support
DoS	Department of State
DR	Dominican Republic
DSC	Deployment Support Command
DSCA	Defense Security Cooperation Agency
DSN	Defense Switched Network or Defense Secure Network or Defense System Network
EAD	Earliest Arrival Date
ECHO	European Community Humanitarian Office
EDIPL	Enhanced Deployable Imagery Product Library
EOC	Emergency Operations Center
ERTs	Emergency Response Teams
ES	El Salvador
ESF	Emergency Support Functions
FA-HUM	Fuerzas Aliadas-Humanitarian
FAO	UN Food and Agriculture Organization
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
FFP	Food for Peace Office
FHI	Food for the Hungry International
FORSCOM	U.S. Army Forces Command
FRP	Federal Response Plan
FSSG	Force Service Support Group
FUNCPLAN	Functional Plan
GCC	Geographic Combatant Command
GCCS	Global Command & Control System
GDIN	Global Disaster Information Network
GT	Guatemala
HA/DR	Humanitarian Assistance/ Disaster Relief
HAST	Humanitarian Assistance Support Team
HF	High Frequency
HN	Host Nation
HO	Honduras
HOC	Hurricane Operations Center or Humanitarian Operations Center
HUMINT	Human (source) Intelligence
I&W	Indications and Warning
IADB	Inter-American Development Bank

IDA	International Disaster Assistance
IFRC	International Federal of Red Cross and Red Crescent Societies
IGO	Inter-Governmental Organization
INMARSAT	International Maritime Satellite
INSARAG	International Search and Rescue Advisory Group
IO	International Organization
ISA	International Security Affairs
JAOC	Joint Air Operations Center
JDPPI	Joint Deployment and Distribution Process Improvement
JFACC	Joint Forces Air Component Commander
JFCOM	U.S. Joint Forces Command
JIB	Joint Information Bureau
JICSE	Joint Intelligence Center Support Element
JMC	Joint Movement Center
JMD	Joint Manpower Document
JOA	Joint Operations Area
JOC	Joint Operations Center
JOPEs	Joint Operational Planning and Execution System
JPMRC	Joint Patients Movement Requirements Center
JRSOI	Joint Reception, Staging, Onward Movement, and Integration
JTF	Joint Task Force
JULLS	Joint Universal Lessons Learned System
kmph	kilometers per hour
LAC	Bureau for Latin America & the Caribbean
LAD	Latest Arrival Date
LCU	Landing Craft, Utility
LIs	Lessons Identified
LMR	Land Mobile Radios
LNO	Liaison Officer
LOC	Logistics Operations Center
LRC	Logistics Readiness Center
LTF	Logistics Task Force
LWR	Lutheran World Relief
MAAG	Military Assistance Advisory Group
MAP	Medical Assistance Programs
MARAD	U.S. Maritime Administration
MARFORSOUTH	U.S. Marine Corps Component, U.S. Southern Command
MC3T	Medical Communications, Control, Computer Team
MCDA	Military and Civil Defense Assets
MDRO	Mission Disaster Response Officer
MEDEVAC	Medical Evacuation
MEDRETE	Medical Readiness & Training Exercise

MEF	Marine Expeditionary Force
METL	Mission-Essential Task Lists
METOC	Meteorological and Oceanographic
MEU	Marine Expeditionary Unit
MGB	Medium Girder Bridge
MHAM	Medical Humanitarian Assistance Mission
MHE	Materials Handling Equipment
MILGP	Military Group
MIWG	Movements Inter-agency Working Group
MOB	Maximum (Aircraft) On Ground
MOEs	Measures of Effectiveness
MOH	Ministry of Health
MOOTW	Military Operations Other Than War
MREs	Meals Ready to Eat
MSC	Military Sealift Command
MSCA	Military Support to Civil Authorities
MTMC	Military Transportation Management Command
MTW	Major Theater War
NCA	National Command Authorities
NCROND	National Center for Rapid Onset Natural Disasters
NGO	Non-Governmental Organization
NHC	National Hurricane Center
NI	Nicaragua
NIMA	National Imaging and Mapping Agency
NIPRNET	Unclassified (but Sensitive) Internet Protocol Router Network
NMCC	National Military Command Center
NMCS	National Military Command System
NOAA	National Oceanic and Atmospheric Administration
NSA	National Security Agency
NSC	National Security Council
NSRR	Naval Station Roosevelt Roads
NWS	National Weather Service
O&M	Operation and Maintenance
OASD	Office of the Assistant Secretary of Defense
OCHA	UN Office for the Coordination of Humanitarian Affairs
OCONUS	Outside the Continental United States
OECS	Organization of the Eastern Caribbean States
OFA	Other Federal Agencies
OFDA	Office of U.S. Foreign Disaster Assistance
OHDACA	Overseas Humanitarian, Disaster, and Civil Assistance
OMB	Office of Management & Budget
OPLANS	Operational/Operations Plans
OPTEMPO	Operational/Operation Tempo
OSD	Office of the Secretary of Defense

OSOCC	On-Site Operations Coordination Center
PA	Public Affairs
PACOM	U.S. Pacific Command
PAHO	Pan-American Health Organization
PAO	Public Affairs Officer
PDD	Presidential Decision Directive
PK/HA	Office of Peacekeeping and Humanitarian Affairs, Office of the Secretary of Defense
POD	Port of Debarkation
POE	Port of Embarkation
POL	Petroleum, Oils, and Lubricants
POLAD	Political Advisor
POTUS	President of the United States
PR	Puerto Rico
PVOs	Private Voluntary Organizations
QDR	Quadrennial Defense Review
Recce	Reconnaissance
Rep	Representative
RFA	Request for Assistance
ROWPUs	Reverse Osmosis Water Purification Units
RSS	Regional Security System (CARICOM)
SACLANT	Supreme Allied Command, Atlantic
SAO	Security Assistance Organization (includes: Military Groups (MILGPs), Military Liaison Offices (MLOs), Offices of Defense Cooperation (ODCs), and Military Assistance Advisory Groups (MAAGs))
SAR	Search and Rescue
J-1	Manpower and Personnel Directorate
J-2	Intelligence Directorate
J-3	Operations Directorate
J-4	Logistics Directorate
J-5	Strategic, Plans and Policy Directorate
J-6	Command, Control, Communications, Computer Services Directorate
SEC	Secretary
SECARMY	Secretary of the Army
SECDEF	Secretary of Defense
SHF	Super-High Frequency
SIPRNET	Secret Internet Protocol Router Network
SJTF	Standing Joint Task Force
SMART	Special Medical Augmentation Response Teams
SMS	Single Mobility System

SO/LIC	Special Operations and Low Intensity Conflict
SOC LANT	Special Operations Command U.S. Atlantic Command
SOCOM	U.S. Special Operations Command
SOC SOUTH	Special Operations Command South
SOF	Special Operations Forces
SOUTHAF	U.S. Southern Command Air Forces
SOUTHCOM	U.S. Southern Command
SPODs	Sea Ports of Debarkation
SPRINT	Special Psychological Rapid Intervention Team
SSC	Smaller Scale Contingency
STP	Shock Trauma Platoons
SUB	Subordinate Commands
SUMA	Supply Management System
SUPP	Supporting Commands
TACC	Tanker Airlift Control Center
TACSAT	Tactical Satellite
TALCE	Tanker Airlift Control Element
TF	Task Force
TOE	Table of Organization and Equipment
TPFDD	Time Phased Force Deployment Data
TRANSCOM	U.S. Transportation Command
TTP	Tactics, Techniques, and Procedures
UCP	Unified Command Plan
ULN	Unit Line Number
UN	United Nations
UNDAC	UN Disaster Assessment and Coordination
UNDMT	UN Disaster Management Teams
UNDP	UN Development Program
UNHCR	UN High Commissioner for Refugees
UNICEF	UN Children's Fund
UNITAS	Yearly, multinational naval deployment exercise to circumnavigate the South American continent
USAF	U.S. Air Force
USAID	U.S. Agency for International Development
USAR	Urban Search and Rescue
USARSO	U.S. Army South
USD	Under Secretary of Defense
USG	U.S. Government
USGS	U.S. Geological Service
USIS	U.S. Information Service
USVI	U.S. Virgin Islands
UT	Universal Time
UTC	Coordinated Universal Time
UTC	Unit Type Codes

VITA	Volunteers in Technical Assistance
VTC	Video Teleconference
WFP	UN World Food Program
WIBISCO	West India Biscuit Company, Ltd.
WIG	West Indies Guard
WMD	Weapons of Mass Destruction
WV	World Vision
WWMCCS	Worldwide Military Command and Control System

APPENDIX B

FINDINGS, DISCUSSION, AND RECOMMENDATIONS

APPENDIX B

CONSOLIDATED LIST OF FINDINGS, DISCUSSIONS, AND RECOMMENDATIONS

ASSESSMENT ISSUES (AI)

FINDING AI-1: DoD, other USG agencies, and many other sources each generated damage and needs assessments following Hurricane Mitch. It was often unclear which of these assessments was authoritative, or how the assessments related to each other.

DISCUSSION: After Hurricanes Georges and Mitch, USCINCSO, JTF commanders, Military Groups (MILGPS), U.S. ambassadors, OFDA teams, FEMA and other USG entities all generated one or more assessments of damage and need. Assessment efforts were initiated from Washington, from within the affected countries by USG personnel located there, and by intermediate military commands. Inconsistent or overlapping assessment data, shaped in part by institutional perspectives, complicated response planning. Moreover, informal, “back-channel” assessment data from the media, U.S. citizens resident in affected regions, host nation citizens with contacts in the United States, and others competed with “official” USG assessment teams for attention in Washington. Based on what occurred after Hurricane Mitch, DoD planners can anticipate a large input of informal assessment data from affected regions, especially when a disaster strikes a region close to the United States. Such data are likely to be of varying quality, but may be delivered directly to high-ranking USG officials, in the Executive or Legislative Branches.

When Hurricane Mitch struck, no USG doctrine, policies, or procedures described the interagency format or reporting process for USG agency assessments, and the same situation persists today. Individual assessments are often “stove-piped” just to the agency generating the assessment team, and no central authority to validate requirements existed. In addition, assessment missions during Mitch were often designed to be country-specific, making it difficult for USG planners to comprehend the regional impact of the natural disaster, setting the stage for inter-country competition for resources. Given substantially different perspectives and data requirements within USG agencies, it is

reasonable to expect that agencies will individually assess conditions after a disaster. But USG assessment could be improved if a standardized, transparent process governed the multiple assessment efforts.

RECOMMENDATION AI-1-1: The Office of Peacekeeping and Humanitarian Assistance (PKHA) and the Joint Staff, through appropriate channels, should request that the National Security Council generate interagency policy clarifying the mandate and system for dispatching assessment teams, for reporting assessment data to the interagency process, for validating requirements, and for achieving maximum coordination among assessment teams generated by USG agencies. Such NSC policy should stress the value of shared assessments among responding agencies, such as combining teams from the Office of U.S. Foreign Disaster Assistance and the geographic combatant commands' Humanitarian Assistance Survey Teams (HAST). NSC policy should designate a focal point within the USG to serve as the coordinating agency for tracking, validating, and seeking synergy among all USG assessment efforts, and for issuing authoritative USG disaster assessments. Focal points should be designated both at the Washington level and within the affected countries to effect coordination among USG agencies. A controlled website or other system for consolidating and displaying assessment data should be considered. NSC policy should further note the importance of USG assessment teams conducting region-wide assessments.

RECOMMENDATION AI-1-2: PKHA and the Joint Staff, through appropriate channels, should request that the National Security Council generate interagency policy clarifying the interagency intake point for collecting formal and informal assessment data, so that the informal assessments received through back channel sources can be systematically reviewed and compared with official USG assessment data. The designated intake point should include a feedback loop, so that the initial USG recipient of the informal assessment can be assured that his/her data are being reviewed.

FINDING AI-2: Additional interagency coordination is required to define more clearly the goals and objectives of USG assessment teams, and to standardize reporting formats.

DISCUSSION: Following Hurricane Mitch, some USG assessment teams were examining the level of damage from the storm, some were examining immediate life-saving relief needs, and others were studying the requirements for rebuilding infrastructure and other longer-term requirements. These different approaches, the timing of the reports, and varying methodologies used to develop them hindered effective planning for the USG's relief and rehabilitation efforts. Although several assessment systems have been developed and promoted by individual agencies (DoD HAST training at the Center for Excellence in Disaster Response, in Hawaii, for example, and the assessment approach developed in OFDA's *Field Operations Guide*), no one system is accepted government-wide.

Of particular concern to U.S. military planners, USG assessment data and reports do not consistently define humanitarian requirements in formats easily translatable into DoD capabilities that could meet those requirements. That is to say, assessment reports by USG agencies, in some cases during Hurricane Mitch, included detailed requests for assets that helped guide military planners; in other instances, assessment reports were too general or primarily of historical, rather than operational, value. A potentially useful model for linking HA/DR assessment data with military capabilities would be the development by USG agencies like OFDA of "service modules," such as those prepared by UN agencies to assist military planners.¹ Service modules are specific statements of capabilities that might be required during an international response to a disaster, such as "provide manpower and support equipment to load/unload as many as 30 military and civilian aircraft at up to 4 separate airfields on a 24-hour-per-day basis. Process 400 metric tons of cargo and 100 passengers per day." Service modules, which dissect humanitarian relief processes into quantifiable capabilities, have been developed by several UN agencies.² (See also Finding CD-1 for more information on service modules.)

¹ The concept and use of service modules is discussed in detail in a draft IDA study, *Potential Global Partners for Smaller-Scale Contingencies* (Ref. 74).

² Currently, three UN agencies (the United Nations High Commissioner for Refugees [UNHCR], the UN World Food Programme [WFP], and the UN Office for the Coordination of Humanitarian Affairs [OCHA]) have organized all or part of their support requirements in service module format.

Currently, USG agencies such as OFDA maintain no similar system of categorizing humanitarian relief requirements.

RECOMMENDATION AI-2-1: PKHA should initiate discussions within DoD and with OFDA and other relevant federal agencies to develop USG interagency standards for post-disaster assessments, emphasizing shared formats, clear distinctions among the various types of assessments undertaken, the appropriate sequence of assessments, and a system for integrating and validating assessment data. Reporting formats should be developed that permit tracking of assessment data over time, as well as measurement of the effectiveness of relief efforts.

RECOMMENDATION AI-2-2: OSD/PKHA, Joint Staff J-4, OFDA and other relevant federal agencies should develop interagency reporting formats that present assessment data in formats that are useful to military and civilian response planners. Assessment formats should facilitate the translation of victims' needs into civilian and military capabilities through the use of service modules specifying capabilities required during a USG response to a disaster.

FINDING AI-3: In order to guide the USG disaster response effectively, DoD and other USG post-disaster assessment teams should be trained in assessment skills, should be ready to be dispatched to the affected areas immediately, should receive transport support to and within affected areas, and should report promptly. In addition, assessment support should be provided to USG personnel – military and civilian – already in the affected areas, who will often be able to provide initial, preliminary assessment information.

DISCUSSION: Rapid assessment data generally come from two sources within the USG: personnel assigned to the Country Team in affected countries, and assessment teams – civilian or military – dispatched from the CONUS or regional centers. During Hurricane Mitch operations, Country Team personnel (including Mission Disaster Response Officers (MDRO), personnel assigned to MILGPs, and other Embassy staff) often responded rapidly to the crisis, but with limited training or background in assessment techniques.

In general, disaster assessment teams from civilian agencies like OFDA arrived quickly following Hurricane Mitch or, in some cases, were pre-positioned in the region. However, these teams did not always generate assessment data rapidly enough to guide policymakers in Washington, and did not provide sufficient guidance on civilian needs that U.S. military forces could fulfill. SOUTHCOM planners were required to generate force requirements and build Time-Phased Force and Deployment Data (TPFDD) while assessments were still being completed. In some cases, USG civilian assessment teams did not receive the highest priority for DoD transport assets in the AOR, adding to delays and prolonging assessments.

Assessments of technical areas such as food supply, health care, the security requirements of displaced populations, and other tasks envisioned for DoD HAST in draft joint doctrine require specialized expertise. During Hurricane Mitch, some highly skilled DoD personnel – especially in the medical and engineering fields – were available to participate in assessment efforts. In general, however, DoD personnel had little background in humanitarian assessments, especially in competencies requiring knowledge of local government capacities or the special needs of displaced populations.

RECOMMENDATION AI-3-1: PKHA and OFDA should further define protocols for the in-country transport support of OFDA or interagency assessment teams dispatched to natural disaster sites to ensure that commanders assign highest priority to

the support of these teams. PKHA and OFDA protocols should establish systems for rapid communications between OFDA teams and U.S. military commanders.

RECOMMENDATION AI-3-2: The Joint Staff and geographic combatant commands should provide additional training in post-disaster assessment techniques to MILGP personnel, defense attaches, DJTFAC teams and other military personnel likely to be on the ground during a disaster or arriving immediately thereafter. Other USG agencies, especially the Department of State (DoS) and USAID, should provide similar training for their personnel. Specifically, the assessment role of the Embassy MDRO should be clarified, and additional training provided to these individuals.

RECOMMENDATION AI-3-3: The Joint Staff should review the expectations for DoD HAST teams in draft Joint Publication 3-07.6, to ensure personnel are receiving the training, guidelines, and other support required to accomplish their assigned missions. Specifically, the Joint Staff should review existing training for DoD medical, engineering, civil affairs, and Special Forces personnel to ensure that they will be prepared to conduct professional assessments of disaster stricken populations, including displaced populations.

FINDING AI-4: Developing an overall picture of storm damage in the SOUTHCOM AOR in the immediate aftermath of Mitch was a significant challenge. In general, within DoD, post-disaster assessment data were not always shared with all commands, staffs, and units that required those data.

DISCUSSION: There were many sources of information on Hurricane Mitch available to SOUTHCOM. These included collateral and all-source intelligence provided by the SCJ-2; weather data from the NWS and NHC; media reporting provided by the Public Affairs Officer (PAO); written, telephonic and email reports from various locations in the disaster area such as the Embassy, OFDA, the MILGPs, JTFs, and others; information from the affected nations themselves; information available in the Washington area that bypassed SOUTHCOM and then was redirected to Miami; and other sources. There was no one comprehensive situation display within the command that provided the most complete and accurate picture. It was not evident that fusing all the data from these many sources was feasible or manageable. In the case of some intelligence from sensitive sources, there were issues of releasability. Obtaining sufficient HUMINT was identified as a concern for a variety of reasons: difficulty in moving around within storm-damaged areas; insufficient contacts with the host nations; limited linguistic capabilities in some areas; and reporting difficulties of those in the field.

Damage and needs assessment reports reaching SOUTHCOM, either from DoD or non-DoD sources, were sometimes stovepiped within the command, and not sufficiently fused across staff functions. For example, OFDA assessment data may have reached one office while MILGP reports reached another, resulting in different bases for planning and tasking. Significantly, JTF commanders or designees did not always receive comprehensive assessment data. In addition to the supported geographic combatant command, other commands would have benefited from timely and comprehensive assessment data, including force providers such as U.S. Joint Forces Command (JFCOM) and commands with important logistics planning responsibilities, like U.S. Transportation Command (TRANSCOM). In fact, some of these commands attempted their own secondary-source assessment efforts. Planning and deployment processes within DoD would be improved if wider dissemination were made of consistent and timely damage and needs assessment data.

RECOMMENDATION AI-4-1: SOUTHCOM staff should review the command's capability and develop procedures to obtain, fuse, and present the essential

intelligence, information, and supporting data to assist decision making during the next disaster, with the goal of establishing a comprehensive system display available to all staff requiring disaster data.

RECOMMENDATION AI-4-2: All geographic combatant commands should issue guidance to their staffs designating a focal point for fusing assessment reports and requiring consistent and timely dissemination of disaster assessment data among staff functions within their commands. Special efforts should be made to provide up-to-date assessment data to JTF commanders or designees, and their staffs, to assist in their planning processes. Timely, fused assessment data should be disseminated from supported geographic combatant commands to component and supporting commands.

COMMAND AND CONTROL (CC)

FINDING CC-1: Forward-stationed U.S. military units, elements, and facilities made critical contributions to the timeliness and effectiveness of the DoD responses to Hurricanes Georges and Mitch.

DISCUSSION: During the responses to Hurricanes Georges and Mitch, the availability of forward-stationed and forward-deployed U.S. military units, elements, and facilities in the disaster area was particularly useful in all phases of the USG response, not only during the Emergency Relief Phase, but also during the Rehabilitation Phase. These units and installations included the following:

- JTF Bravo at Soto Cano Air Base, Honduras
- MILGPs and Defense Attachés (DATTs), where MILGPs did not exist, at U.S. embassies in the affected nations³
- Air Force, Army, and Navy Special Forces units in Panama and Puerto Rico
- Capabilities provided by the air base in Soto Cano, Honduras, and by Naval Station Roosevelt Roads, Puerto Rico
- Helicopters, fixed-wing aircraft, and Military Transportation Management Command/Military Sealift Command (MTMC/MSC) offices in Panama
- Support Group Haiti
- The Air Mobility Command Station Manager at Comalapa Air Base, El Salvador
- National Guard and Reserve Component personnel in Puerto Rico (although not technically forward-deployed in the sense of other DoD assets)
- Naval construction units in Puerto Rico
- U.S. Coast Guard personnel and assets stationed in Puerto Rico by the Department of Transportation.

Disaster response is not necessarily the primary mission of these organizations. They were, however, in the area affected by the storm and their capabilities and forward locations were important to the rapid and effective response of the USG. The MILGPs and DATTs were key participants in the disaster response in each country affected by the

³ Although the text refers to the potential disaster response roles of both MILGPs and DATTs, the fundamentally different nature of the missions normally assigned to these two types of organizations must be taken into account when assessing their potential as members of the overall USG and DoD disaster response effort.

hurricanes. These organizations were familiar with U.S. Embassy procedures, steeped in the local culture, language qualified, and able to provide valuable contacts with the host nation military and other agencies. However, few of the personnel assigned to the MILGPs, DATTs, or other DoD organizations had any disaster training or experience in disaster response, either with the technical aspects of managing disaster response, or the complex process of coordinating disaster assistance among OFDA, the U.S. Embassy, SOUTHCOM, JTFs, the host nation, and other participants (e.g., inter-governmental, international, or non-governmental organizations). Training for these personnel in disaster response and coordinating with USG civilian organizations, as well as the other participating organizations, is essential and such training would have improved the DoD response to the hurricanes.

The varying relationships between MILGPs or DATTs and the lead DoD commands for disaster response also complicated the role of forward stationed units in the relief efforts. In the case of the MILGPs, their relationships with the SOUTHCOM headquarters were established⁴ and many of them had visited SOUTHCOM headquarters. The DATTs, on the other hand, are Defense Intelligence Agency (DIA) assets, with limited contacts in some cases with the geographic combatant command.⁵

In addition to facilitating coordination with the affected nations, the MILGPs and DATTs also provided significant support to the incoming U.S. military disaster response personnel. For example, the beddown, initial life support, and transportation of arriving JTF Aguila personnel and the SOUTHCOM DJTFAC were arranged by the MILGP in El Salvador on short notice and with limited information on the disposition of the units once they arrived in country. In Nicaragua, coordination of relief assistance was a particular challenge for the DATT in Managua because no formal military-to-military relationships were in place.

The value of basing facilities in the AO was sometimes undercut by storm damage to the bases themselves. Both NSRR and Soto Cano Air Base personnel spent long hours trying to protect vital base capabilities from weather damage or engaged in clean-up after the respective storms. Given the importance of forward bases to the

⁴ It should be noted that MILGPs also have responsibilities to the Defense Security Cooperation Agency (DSCA) in Washington.

⁵ Although DATTs usually have contact with the SOUTHCOM J-2, in at least one case (Nicaragua), the acting DATT had not yet visited SOUTHCOM headquarters before becoming fully engaged in the Mitch response.

conduct of relief operations, as well as other ongoing operations, in disaster-prone regions, investments in "hardening" these facilities to mitigate storm damage might be considered. At Soto Cano in particular, vital electrical generation capacity was located in an area vulnerable to floodwaters, requiring strenuous sandbagging operations by base personnel during the height of the hurricane.

Many of the military resources available to respond to Mitch have been redeployed and can no longer provide a similar rapid response.⁶ Among the more difficult to obtain assets employed during Mitch operation were the following:

- The C-27 transport aircraft with short-field capabilities, a key resource in the Mitch response, are no longer in the USAF inventory.
- C-130 aircraft relocated from Panama to Puerto Rico. It appears that four C-130s will be maintained in Puerto Rico, although it is understood they will be Reserve rather than Active Component resources.
- The Panama-based Landing Craft Utility (LCU) boats that were helpful in moving coastal cargo during Mitch have been redeployed from Central America
- All U.S. military helicopters formerly located in Panama.
- The MTMC and MSC offices have been moved from Panama to Puerto Rico and CONUS, respectively.

The DoD is not the only forward deployed organization. Representatives of other departments and agencies of the USG, such as the U.S. Embassies in each country and the regional office of OFDA in Costa Rica, are important assets in a coordinated, timely, and effective USG response to rapid-onset foreign disasters.

RECOMMENDATION CC-1-1: The Office of Peacekeeping and Humanitarian Assistance, in coordination with the Joint Staff Director for Operational Plans and Interoperability, should develop HA/DR training programs for personnel assigned to U.S. embassies (e.g., MILGPs, Security Assistance Offices (SAOs), and DATTs). These programs should ensure that personnel assigned to these positions arrive at forward locations with necessary technical skills and knowledge of the various USG and other organizations that are likely to be involved with foreign disasters, so that effective

⁶ The loss of the bases in Panama is being separately addressed within the USG as an issue related to counter-drug operations in Latin America. The successful resolution of that issue may have a positive impact on the availability of bases for disaster relief operations in the region.

coordination can be effected when required. These personnel should also be required to participate in joint HA/DR exercises conducted by the geographic combatant commands.

RECOMMENDATION CC-1-2: The Director, Joint Staff, in coordination with the Director of the Defense Intelligence Agency and the Director of the Defense Security Cooperation Agency, should review, clarify, and disseminate information on the command and control relationships for personnel assigned to U.S. Embassies (e.g., MILGPs, SAOs, and DATTs) during foreign HA/DR operations. Specifically, these relationships should clarify the tasks to be undertaken and support these personnel may be called upon to provide for the geographic combatant command, JTFs, and other U.S. military organizations that deploy for HA/DR operations in the host nation.⁷

RECOMMENDATION CC-1-3: SOUTHCOM should conduct a review of all forward-stationed resources that played critical roles in the Georges and Mitch responses, but are no longer available because of redeployment, or are now mal-positioned for disaster response in Central America or the Caribbean Basin. Plans to offset these capabilities should be developed, including possible seasonal arrangements that provide for a rapid disaster response capability, either through temporary redeployment of U.S. capabilities or through arrangements with other allied nations or commercial contracts.

RECOMMENDATION CC-1-4: Geographic combatant commands should conduct a review of all forward bases in disaster-prone regions to determine if additional investments are required to protect vital base facilities from damage likely to be caused by high-probability natural disasters occurring in the AOR.

⁷ As noted in Chapter III of this study, one key task that might be assumed by MILGPs and other U.S. military personnel stationed at U.S. Embassies would be to establish early contact between civilian and military disasters responders in a proto-CMOC. This approach has been adopted in SOUTHCOM's Humanitarian Assistance and Foreign Disaster Relief FUNCPLAN of 15 October 1999.

FINDING CC-2: Joint Task Forces were SOUTHCOM's command and control method of choice to respond to Hurricanes Georges and Mitch, but significant improvements could be made in the readiness and effectiveness of JTFs as disaster response organizations.

DISCUSSION: To respond to Hurricane Georges, SOUTHCOM established JTF Full Provider. For Mitch, the command already had JTF Bravo in Honduras, and a second organization, JTF Aguila with its three subordinate task forces (TFs), was established in Central America.

1. Challenges for JTFs

The JTFs functioned well under trying circumstances. However, each of the JTFs faced similar challenges, including the following:

- **Coordination Mechanisms.** The JTFs had to devise mechanisms for coordinating with the large number of civilian agencies – the host nation, USG, inter-governmental organizations (IGOs), international organizations (IOs), non-governmental organizations (NGOs), and other donor nations – responding to the disasters. This was particularly challenging for JTF Full Provider, which was afloat and had to operate under bifurcated USG procedures for domestic and foreign disasters caused by a single event, and for JTF Bravo during the relief phase of operations, when its AOR included four nations affected by Hurricane Mitch.
- **Cultural Awareness and Language Skills.** Locating and employing personnel with necessary language capabilities, and raising the level of cultural familiarity of the JTF headquarters and its assigned units are both essential. The nature of HA/DR operations put many small units – medical, engineering, and transportation – in direct contact with host nation officials and local civilians, requiring language skills and cultural awareness at the lowest echelons to accomplish their respective missions.
- **Support Responsibilities.** The highly specialized units deployed to the affected area relied on the JTF headquarters for reception, processing, and administrative and logistical support. Some of these units such as engineers and smaller medical and civil affairs teams required substantial security, transportation, and logistical support. These issues were of particular concern to the JTFs deployed in Central America because many diverse U.S. military units were deployed into the area in response to perceived HA/DR needs before assessments were completed, and specific unit assignments were not known until well after they had arrived.

- **An Ambiguous Force Protection Environment.** Force protection is an inherent responsibility of command and, in these HA/DR operations, related primarily to crime, uncertain response from desperate victims of the disaster, and hazardous and unhealthful operating environments, for example, rather than hostile forces.⁸ Because status of forces agreements were not in place, issues of carrying weapons and rules of engagement had to be negotiated as the forces deployed. [See Finding LA-1]. Helicopter crews were delayed in flying missions because of the need for orientation flights. [See Finding HS-1]. Operating under guidance from the geographic combatant command that emphasized force protection, JTF commanders faced difficult choices reconciling unique force protection requirements with the exigencies of the mission.⁹
- **Operational Environment.** The JTFs had to operate in an urgent and chaotic operational environment that involved coordination with a number of unfamiliar civilian organizations as well as local military organizations; intense scrutiny by the international, host nation, and U.S. media; and visits by a wide range of distinguished visitors. These demands were especially severe on JTF Bravo, the single JTF that was operational when early relief operations began.

2. Relationship between JTFs

Several additional command and control issues surfaced in the relationship between the two JTFs responding to Hurricane Mitch. For example, one group interviewed for this study expressed the view that command and control (C2) for Central America would have been better with JTF Bravo retaining control of the military response in the four affected nations, with JTF Aguila subordinate to JTF Bravo. Other observers argued that the JTFs might better have been established as Combined Joint Task Forces (CJTF), because of the number of other nations' military forces that provided relief assistance.

⁸ In at least one instance, the commander of JTF Full Provider and his staff were at some risk of injury from enraged disaster victims in the Dominican Republic.

⁹ By 12 November, when CINCSO issued his OPORD for Central America disaster relief operations, the centrality of force protection was clear. The "Commander's Intent" stated CINCSO's intention to "**safely** employ . . . JTFs to expeditiously mitigate . . . human suffering." [Author's emphasis added] The Coordinating Instructions contained in that OPORD listed "force protection" as the highest "priority of effort" element.

3. Timeliness of JTF Deployment Readiness

Many data sources questioned the timeliness of the JTFs deployed into the affected area. Both JTF Full Provider and JTF Aguila arrived well into the Rehabilitation Phases of Hurricane Georges and Hurricane Mitch, respectively. This relatively late deployment was attributable to the joint procedures to identify and assemble a JTF – the commander, the headquarters, and the task units.¹⁰ Currently, delays are inevitably encountered in standing up a functioning JTF in the short timeframes demanded by HA/DR missions. A number of small force structure or management options are available for enhancing DoD performance when military forces are called upon to assist with these missions. These options include the following:

- **Pre-designate HA/DR JTFs:** For a specified period of assignment geographic combatant commands could (1) configure and train standby JTFs from assigned forces, or (2) pre-select and pre-train selected combat support and service support task units and headquarters (e.g., corps support groups, force service support groups, engineer brigades, or similar commands) to serve as the JTF.¹¹
- **Pre-designate JTF Commanders:** For a specified period of time, a pool of standby potential JTF commanders could be designated, either within geographic combatant commands or centrally for assignment to geographic commands requiring augmentation. These pre-designated commanders would undergo annual training comparable to that provided to the FCO and DCO for domestic HA/DR operations.
- **Pre-designate JTF Headquarters:** Establish one or more standby JTF headquarters in JFCOM, composed of civilian and military personnel specially trained in HA/DR assessment and other skills. Conceptually akin to the headquarters of a Marine Expeditionary Unit (MEU), such a standing headquarters would augment the JTF created by the geographic combatant command with special skills not normally available, in effect a strategic DJTFAC for HA/DR operations.

¹⁰ Because few forces were assigned permanently to SOUTHCOM, JTF Aguila personnel were provided by JFCOM. The process for identifying and assembling the individual personnel for the headquarters was cumbersome and not responsive to the HA/DR timelines. The JTF Aguila headquarters staff was built around an existing unit headquarters (the headquarters of the 593rd Corps Support Group, stationed at Fort. Lewis, Washington).

¹¹ Yet another approach to managing the force to enhance foreign disaster response operations would be to examine the current parameters of Joint Forces Command's Joint Task Force Civil Support. Although JTF Civil Support now focuses solely on weapons of mass destruction (WMD) within the boundaries of the United States, its role might theoretically be expanded in the future so that this standing JTF would serve as the locus for planning and stand-by forces for overseas natural disasters, as well.

- **Pre-designate Task Units for HA/DR Missions:** For a specified period of time, pre-designate Active Component units with capabilities likely to be required for HA/DR operations from across the Services, with mission-essential task lists (METL) altered to fit the likely HA/DR tasking.

The underlying assumption for these approaches is straightforward: disaster relief operations, although they can be accomplished by general-purpose forces, require special knowledge and training to be done efficiently. The crosscutting connection among these approaches is the notion that specialized skills (both technical skills, like disaster medicine, and communications skills, like liaison with NGOs) can be developed through mission assignment and training, and deployed expeditiously to the disaster response AOR.

4. Training of JTF Commanders

During Hurricanes Georges and Mitch, JTF commanders and subordinate task force commanders applied their considerable command experience and high level of combat and combat support skills to the complex situations they encountered, but recognized that they would have benefited from additional training and preparation. The three JTF commanders had no HA/DR experience or formal training to prepare them for the HA/DR missions they had to perform, and the commanders of JTF Full Provider and JTF Aguila assumed command on very short notice of hastily assembled forces that had never worked together. These commanders were provided little information on critical topics such as the role and capabilities of civilian USG agencies specializing in foreign disaster response. By contrast, federal civil employees and military officers who serve as FEMA domestic Federal Coordinating Officers (FCOs) and Defense Coordinating Officers (DCOs), respectively, are pre-designated, and receive extensive specialized training to prepare them for their roles. As the system for designating and preparing JTF commanders now operates, CJTF designees may or may not be familiar with the USG procedures for supporting civilian authorities during domestic or foreign HA/DR operations and other essential topics like managing relations with NGOs, relations with host governments, assessment techniques, and media relations.

5. Use of Advance Parties

In the immediate aftermath of rapid-onset foreign disasters, when assessments are still underway and the concept of operations is evolving, units may be tasked to deploy with only partial information on conditions in the affected area or the tasks they are likely to carry out. Under these conditions, advance teams can benefit both the JTF and the

deploying units and facilitate the deployment. Many units scheduled for deployment to JTF Aguila sent advance parties to the JTF headquarters. These personnel provided the deploying units with essential information on anticipated tasks, the appropriate unit equipment and other materials that were needed, and living conditions. At the same time, the advance parties advised the JTF commanders and staffs of the unit's specific capabilities. The advance parties were also able to transmute seamlessly into liaison cells between arriving units and JTF headquarters, as well as serving as reception points for incoming troops.

6. Composition of JTF Headquarters

Experience in these operations demonstrated that the composition of the JTF headquarters needed for HA/DR operations were markedly different from that required for combat operations. The headquarters did not need many combat specialties, but instead required skills often not needed during combat operations such as disaster response management, and larger numbers of personnel for public affairs, legal affairs, civil affairs, medical (including public health), engineering, contracting, and liaison to civilian organizations to support the disaster response in a complex, civilian-led environment.

RECOMMENDATION CC-2-1: The Chairman, Joint Chiefs of Staff, in coordination with the unified combatant commanders, the military departments, and the Office of Peacekeeping and Humanitarian Assistance, should conduct a study focused on enhancing the timeliness and effectiveness of mobilizing JTFs to manage foreign HA/DR operations. Options should include pre-designating JTF commanders, properly configured headquarters staffs, and task units likely to be assigned HA/DR missions, and training these personnel for these missions.

RECOMMENDATION CC-2-2: To ensure a timely and cohesive HA/DR response, supported and supporting commanders and the Joint Staff should ensure that, when a JTF is established for these operations, the JTF headquarters is created by augmenting a single unit, rather than from individuals assigned to JTF billets.

RECOMMENDATION CC-2-3: To facilitate a rapid and effective deployment and employment of DoD capabilities during HA/DR operations, supported and supporting commanders and the Joint Staff should ensure that units forming the JTF dispatch advance parties to the JTF headquarters. The advance parties should be prepared to brief unit capabilities to the JTF commander and staff, to relay tasking and

other local operational information needed by the deploying unit, and to assist the main body of the deploying unit when it arrives.

FINDING CC-3: The SOUTHCOM DJTFAC deployed to facilitate the establishment of JTF Aguila headquarters following Hurricane Mitch, but it was not configured for the mission it was assigned and lacked essential capabilities.

DISCUSSION: A critical element in establishing a JTF headquarters for a disaster relief operation (or other SSC operations) is a DJTFAC that can provide the headquarters with the expertise and knowledge of the geographic combatant command staff. Originally intended as a core element to plug into a deploying JTF, the DJTFAC for Mitch served as the JTF Aguila staff for several weeks until the unit assigned as the headquarters staff arrived. The DJTFAC was composed of personnel selected from the SOUTHCOM staff and, with augmentation provided by USACOM (now JFCOM), faced significant challenges while becoming a fully operational JTF headquarters. The DJTFAC faced the following problems:

- **Training Shortfalls:** Because it served as the *de facto* JTF headquarters during the critical deployment planning phase, the DJTFAC was required to develop the TPFDD for the deployment and redeployment of the JTF Aguila headquarters and its three component task forces without adequate training in the Joint Operational Planning and Execution System (JOPES), and without the required planning tools. It was also not trained in Reception, Staging, Onward Movement, and Integration (RSOI) and had to perform these tasks as the JTF was deploying. The DJTFAC had little preparation for dealing with foreign governments, lacked language capability, and was not staffed or trained to conduct adequate liaison with UN agencies, IOs, NGOs, and other civilian disaster response organizations.
- **Support Shortfalls:** To perform the JTF functions, the DJTFAC needed a complete Joint Intelligence Center Support Element (JICSE), which was not provided. It also had no contracting capability.
- **Equipment Shortages:** The DJTFAC needed a deployable, more robust communications and automation package than was available. These deficiencies, which are discussed in Finding CK-1, Command, Control, Communications and Computers (C4), were critical to the success of the HA/DR response for both Georges and Mitch, but relief operations revealed a number of systemic issues that face U.S. military units during such operations. C4 planning and implementation to address these gaps were not sufficiently comprehensive or integrated.
- **Inadequate Life Support.** The location for their beddown in El Salvador was an austere host nation military base. Although the U.S. MILGP was able to provide significant assistance to offset these shortfalls, many basic support systems were marginal.

The DJTFAC employed to establish a JTF headquarters, while JTF Aguila was being formed, performed well under the circumstances and the experience gained was useful. However, the mission of the DJTFAC to form a JTF headquarters staff until the designated unit arrived was significantly different from the planned augmentation to an already formed JTF headquarters staff, and the DJTFAC was not prepared for the expanded mission. The Mitch experience should be used to review all potential DJTFAC missions and ensure that appropriate manning, equipping, training, and exercising is provided to enhance the DoD's capabilities in HA/DR situations.

RECOMMENDATION CC-3-1: All geographic combatant commands should ensure that organic DJTFACs or similar organizations are adequately tasked, staffed, trained, equipped, and exercised to perform either as the advanced echelon for a JTF headquarters, or as a command and control plug into a planned JTF headquarters.

FINDING CC-4: A critical element of responding to foreign rapid-onset disasters is shortening the time required to respond. This includes estimating the consequences of the disaster, determining the USG response, identifying the USG capabilities that are needed for the response (civilian or military), and then delivering the capabilities to the affected area. Combining these functions in a single action center would facilitate rapid USG and DoD response to foreign HA/DR operations.

DISCUSSION: Effective responses to rapid-onset disasters such as Hurricanes Georges and Mitch must be timely. Timely response depends on three separate triggers. The first trigger is the tactical and technical alerting from meteorological or geological data that a major disaster is about to occur (or has occurred for some disasters like earthquakes), and related predictions about expected damage. The second trigger is more complicated because it concerns political and strategic decisions on the extent of the USG response and the type of response that will be provided. The third trigger is the process for alerting and deploying organizations, civilian and military, that provides the response.

The track of Mitch as it approached Central America was predicted fairly accurately, although the expected landfall did not occur in Belize, as expected. The extensive rain and flood damage in Honduras and Nicaragua and other countries was far more serious than expected. Once Mitch struck land, it took several days for the scale of destruction caused by the storm's precipitation to become clear. There was delayed response and confusion in Washington, related both to assessing the extent of damage caused by Mitch and determining the scope of USG relief efforts. To the extent that U.S. military commanders were able to utilize resources readily available in the area during the period immediately following the storm, SOUTHCOM and subordinate units responded rapidly and effectively at the operational and tactical levels to save lives. But during the following days, the USG and DoD process at the strategic and national levels to assess the damage and decide how much the USG would provide was inefficient; alerting, preparing, and deploying U.S. civilian and military capabilities took longer than required; and the USG faced public and media criticism that its response was late.

To set the conditions for a more timely USG response to rapid-onset foreign disasters, there is a need to integrate the tactical and technical data collection and prediction capabilities with decision making that evaluates the national interests and determines the level of and composition of the USG response. This integration is already accomplished for domestic emergencies through the operation of FEMA's National Emergency Coordination Center (NECC). The NECC is responsible for maintaining a

24-hour capability to monitor all sources of warning or disaster information, in conjunction with the Catastrophic Disaster Response Group (CDRG). The NECC reports disaster events to FEMA leadership and the other federal agencies that are signatory to the *Federal Response Plan* (FRP). The CDRG, composed of representatives of all FRP signatory agencies, provides guidance and policy direction on response coordination issues (Ref. 19). Creating such mechanisms as the NECC and CDRG for foreign disaster response – designated the National Center for Rapid-onset Natural Disasters (NCROND) – would be an important step in linking the critical elements of a rapid USG response: warning, prediction, notification, and deployment policy guidance. In another option, the existing OFDA Operations Center, which operates as a coordination point during foreign disasters, could be expanded to play this role.

Another alternative would be to utilize the capabilities of the National Military Command Center (NMCC) for foreign disaster response. The NMCC and its Emergency Action Process (EAP) could serve as a central part of the USG activity, with communications links established to the combatant commands, U.S. Embassies, FEMA, USAID (OFDA), NOAA, USGS, National Weather Service and National Hurricane Center, the intelligence community (CIA, DIA, NSA), DoS, NSC, UN, foreign governments, and others. A number of these organizations are already linked to the National Military Command System (NMCS), Global Command and Control System (GCCS), and the NMCC. An additional resource that should be integrated into the USG center for any of the options is the Global Disaster Information Network (GDIN) with its broad information sources.

Regardless of the exact mechanism adopted, the core requirement is to create a capacity for combining prediction capabilities for rapid onset disasters with a process for developing and addressing options for early interagency review and national decision making on the nature and scope of the USG response. If standing JTF headquarters were established by DoD for HA/DR operations, as separately recommended in this report, the proposed NCROND and standing JTF headquarters staffs could closely coordinate and train together prior to disasters and establish procedures to expedite the interagency decision making needed during the early response phase. [See Finding CC-2].

RECOMMENDATION CC-4-1: The Secretary of Defense and the Chairman, Joint Chiefs of Staff, should recommend to the NSC that the USG establish a national capability for improved response to rapid onset foreign disasters by consolidating in one organization a prediction capability for natural disasters worldwide, including estimates

of damage, and an interagency mechanism for rapidly determining the extent and composition of the USG response, and the procedures to expedite the response.

RECOMMENDATION CC-4-2: The Office of Peacekeeping and Humanitarian Assistance, in coordination with the Director, Joint Staff, should examine the capabilities of the NMCC to serve as a central coordination point for early warning of rapid onset disasters and for early USG decision making to expedite civilian and military response to HA/DR requirements and report the results, with recommendations, to the Chairman, Joint Chiefs of Staff and the Secretary of Defense.

FINDING CC-5: Rapid deployment of substantial DoD assets from outside the theater, immediately after a major foreign disaster, is encumbered by numerous procedural obstacles. Because of these procedures, most U.S. forces that served in the Hurricane Mitch disaster response arrived weeks after the hurricane struck.

DISCUSSION: The draft publication *Joint Tactics, Techniques, and Procedures for Foreign Humanitarian Assistance*, Joint Pub 3-07.6, defines the purpose of foreign humanitarian assistance (FHA) as follows: “to relieve or reduce the results of natural or manmade disasters . . . such as human pain, disease, hunger, or privation that might present a serious threat to life or loss of property.” Following natural disasters, the greatest threat to life often occurs immediately after the disaster event, when victims are isolated, trapped, exposed to the elements, without drinking water, or otherwise especially vulnerable. During the Hurricane Mitch contingency, some DoD units arrived almost instantaneously after the tempest. These were primarily units deployed from within the region. Most of the units deployed from outside the SOUTHCOM AOR arrived weeks later, after the immediate lifesaving work was accomplished. The arrival of many units would have been delayed for an additional period if Soto Cano Air Base had not been available as a staging facility. Although it is not the USG role to serve as the global “first responder” following natural disasters, procedural obstacles clearly delayed the DoD reaction to Mitch. Among numerous reported procedural causes for delayed deployment were the following:

- The negotiations were cumbersome among the supported and supporting unified combatant commands, the military departments, and Joint Staff – sometimes by VTC – to deconflict requests for forces contained in the Deployment Order (DEPOD)
- There was no template at SOUTHCOM for sizing or configuring a JTF staff.
- The SOUTHCOM Functional Plan (FUNCPLAN) for disaster response contained no force list, no JTF component, no TPFDD, and no supporting plans.
- Point of contact lists at SOUTHCOM headquarters were not up-to-date.
- There were no current Standing Operating Procedures (SOP) in the SOUTHCOM logistics readiness cell.
- SOUTHCOM planners were unfamiliar with the U.S. Atlantic Command – developed Joint Electronic Battlebook (JEB), which was designed to assist staffs of combatant commands, component commands, and JTFs with planning operations.

RECOMMENDATION CC-5-1: Unified combatant commands should annually review planning and deployment procedures for responding to rapid-onset foreign disasters, reporting the results of these reviews to the CJCS. Annual reviews should examine procedures for standing up a JTF and staffing crisis action centers or logistics readiness centers, and should include recommendations for streamlining procedures for coordinating and sourcing requests for forces.

RECOMMENDATION CC-5-2: The Joint Staff and unified combatant commands should ensure that procedures for rapidly sourcing and deploying JTFs in support of HA/DR contingencies are included in joint exercises.

FINDING CC-6: DoD search and rescue (SAR) operations saved many lives in the immediate aftermath of Hurricane Mitch, in part because of the unique environment of that operation (such as SAR assets stationed in or near the AO). Similar circumstances may not prevail in most foreign disasters.

DISCUSSION: SAR operations are often the very first relief missions launched after a disaster, and are unique in many respects. The first of these is the requirement for extraordinarily rapid deployment. The period of time during which trapped or isolated disaster victims can survive without outside help depends on many factors, including extent of injuries, weather, access to drinking water, victims' overall health, and others. In many crises, trapped or isolated victims who do not receive help within several days will succumb, and SAR operations, therefore, place a premium on rapid response. The standards of the International Search and Rescue Advisory Group (INSARAG) require SAR teams from contributing nations to be en route within 8 to 10 *hours* of activation.

A second aspect of SAR operations is the requirement that deployed teams or units be self-supporting for a period of time. Because SAR operations are often launched into extremely austere or devastated environments prior to the arrival of most relief programs, SAR teams and units may have to be totally self-supporting for a period of days or weeks. INSARAG standards, for example, require deployed teams to carry their own potable water and medical supplies sufficient to treat injured team members and sustain their operations for 30 days.

Besides U.S. military assets, a number of SAR assets are available in foreign disaster operations. OFDA maintains contractual relationships with two civilian SAR organizations in the United States, which are deployable to foreign disasters.¹² Because SAR operations must be launched quickly to be successful, military forces of nations in the region of the disaster with substantial capacities (such as Mexico after Hurricane Mitch or South Africa following the more recent flooding in Mozambique) often play a major role in such missions. Civilian organizations operating in the affected area prior to the disaster (including NGOs, IOs, and private corporations), especially those engaged in transport or logistics operations, may also have air, ground, or waterborne assets that can be shifted quickly to rescue efforts.

¹² From the Fairfax County (VA) Fire and Rescue Department, and the Miami-Dade (FL) Fire Rescue Department. These organizations are described at OFDA's website (Ref. 70).

DoD personnel contributed significantly to SAR operations in Central America after Hurricane Mitch, relying on helicopters and small boats to locate and rescue persons trapped by flooding. The number of disaster victims evacuated by U.S. forces exceeded one thousand. Most of these rescues were performed by U.S. Special Forces units that deployed from within the region (Panama), based on oral tasking. They operated out of Soto Cano Air Base, an established U.S.-operated facility close to the disaster site. That is, U.S. military SAR teams were able to deploy relatively quickly following Hurricane Mitch in large part because they were stationed at that time close to the disaster site. Although deploying to austere environments, these units were able to rely on logistics support from the pre-deployed JTF in Honduras. Even then, some observers questioned whether U.S. military SAR assets arrived soon enough after Hurricane Mitch, and whether all hard-hit areas were adequately served. It is unlikely that the set of conditions present during Mitch – U.S. military units with SAR capabilities stationed nearby, and U.S. military logistics support available within helicopter distance from the disaster site – can be replicated in most disaster-prone regions of the world, calling into question the ability of DoD forces to launch or support timely SAR operations after natural disasters. If the U.S. military will be tasked with conducting foreign SAR operations following rapid-onset disasters, mission-specific tasking, operating procedures, and resources must be developed. SAR operations, it should be noted, often draw extensive media coverage.

RECOMMENDATION CC-6-1: The Office of Peacekeeping and Humanitarian Assistance should review, in conjunction with geographic combatant commands and SOCOM, DoD's capability – including shipboard capability, and use of foreign military bases – to launch and support SAR operations after foreign natural disasters. This review should include consideration of whether specified U.S. military units should be tasked with the mission of preparing for foreign SAR operations, and whether these forces should receive the resources and training to conduct these operations.

RECOMMENDATION CC-6-2: In regions where U.S. forces may be expected to be called upon for SAR missions but where timely SAR operations are not supportable, unified combatant commands should examine other strategies for supporting rescue operations, and include these strategies in their Functional Plans. These strategies might include training and logistics support of local military forces, agreements with allied military forces within the region, or identifying potential civilian assets in the area that might be contacted to facilitate SAR operations.

RECOMMENDATION CC-6-3: Because Special Operations Forces may reasonably be expected to respond within the limited timeframe during which SAR

operations may be successful, SOCOM should review the training, support, and tasking of its units to conduct these types of operations and coordinate with the U.S. Embassy, the host nation, and other responding organizations in likely areas where these operations may be required.

RECOMMENDATION CC-6-4: The Military Departments and unified combatant commands should ensure that any units tasked with rapid deployment for SAR missions are equipped with self-sustainment packages for a minimum of ten days or until logistical support can be provided to the affected area.

FINDING CC-7: Air operations in the SOUTHCOM area of responsibility accelerated rapidly in the aftermath of Hurricane Mitch, generating complex command and control issues. Overall coordination of air operations in the area would have benefited from early, pro-active involvement by SOUTHAF, the air component of SOUTHCOM, for management of air operations.¹³

DISCUSSION: A common impact of natural disasters is their crippling effect on surface transportation infrastructure. Air operations become central to providing relief to the victims. In response to the regional devastation inflicted by Mitch, SOUTHCOM initiated multifaceted air operations involving both strategic airlift into the region and tactical employment of U.S. military fixed-wing aircraft and helicopters within the affected region. In addition, a number of other donors also provided civilian and military flights into the affected region. These air operations were controlled by the host nation, but often required augmentation from a number of U.S. military organizations, and extensive coordination with other USG and non-USG civilian agencies to keep missions flying safely and efficiently. Among the many DoD air operations underway in the weeks following Hurricane Mitch were the following:

- Strategic airlift missions, which brought with them the early deployment by TRANSCOM of a Director of Mobility Forces (DIRMOBFOR) and Tanker Airlift Control Elements (TALCEs)
- Theater airlift of relief supplies, by helicopter and fixed-wing aircraft, both within affected nations and across national boundaries
- Search and rescue operations by helicopters, which attempted to reach pockets of victims surrounded by floodwaters
- Transport of several contingents of USG distinguished visitors, who were assessing damage and offering support to flood victims
- Denton relief flights, primarily by Air National Guard and USAF Reserve units, into the region
- Management of air traffic at functioning airfields in the region, by a combination of host nation and U.S. resources previously deployed to the region (such as MILGP personnel, DATT personnel, and AMC contractors) and additional specialized units deployed to the region.

Air operations in the immediate aftermath of the storm were conducted primarily by theater assets, including the organic capabilities of JTF Bravo and the SOUTHAF

¹³ SOUTHCOM's air component is 12th Air Force, stationed at Davis Monthan Air Force Base, Arizona.

subordinate 24th Wing at Howard Air Force Base, Panama. As the demand for air assets increased, SOUTHCOM requested assistance directly from supporting commands. These supporting commands, such as TRANSCOM, subsequently provided resources from subordinate commands, such as Air Mobility Command (AMC). The initial response from SOUTHAF was through its forward deployed elements, and the component played a limited role in planning and facilitating the employment of other deploying air assets to the SOUTHCOM AOR. SOUTHAF headquarters became directly involved in the formal organization and operational command and control decisions about 2-½ weeks after the storm hit, as it became aware of the extent of the Mitch disaster and the magnitude of the response. By that time, a number of coordination issues had arisen. These issues included the following:

- Establishing the theater air coordination arrangements among the Joint Force Air Component Commander (JFACC), the DIRMOBFOR, and the Joint Air Operations Center at Soto Cano
- Determining the appropriate number of DIRMOBFORs required (SOUTHAF recommended one for the Central American Area of Operation (AO); SOUTHCOM, JTF Bravo, and JTF Aguila preferred one each for the two JTFs – the position that ultimately prevailed)
- Determining how the hub and spoke operations for theater lift should be organized (JTF Bravo and SOUTHAF preferred one for the entire region using Soto Cano Air Base as the hub – the structure that was ultimately adopted – while JTF Aguila desired a second hub and spoke operation centered at Comalapa Air Base, El Salvador, to cover the three countries in its AOR)
- Determining whether a fully staffed air operations center (AOC), with a standard level of air support assets (such as a 50-bed air transportable hospital, and a 40-man team from SOUTHAF headquarters), would be required at Soto Cano Air Base.

Once SOUTHAF headquarters became directly engaged in the resolution of these and other command and control issues, an overall structure for controlling air operations in support of the Mitch response was established. This structure resulted in the JFACC being located at SOUTHAF headquarters (Davis Monthan AFB), a JFACC (Forward) and an Air and Space Expeditionary Task Force (AEF) at Howard Air Force Base, Air Force Forces (AFFOR) at both JTF Bravo and JTF Aguila, and JAOC with the primary

DIRMOBFOR at Soto Cano Air Base and a second DIRMOBFOR at Comalapa Air Base.¹⁴

RECOMMENDATION CC-7-1: SOUTHCOM and other geographic combatant commands should review procedures to ensure that all component commands are fully involved in the planning and execution of rapid-onset HA/DR response operations from the outset. Given the expectation that significant air assets will be required in the aftermath of rapid-onset natural disasters, geographic combatant commands should exercise special care to ensure air component commands are engaged in the planning and control of U.S. air assets employed during HA/DR operations.

¹⁴ USAF doctrine called for a separate JFACC, AOC, and AFFOR for each of the two SOUTHCOM-established JTFs.

DOD INTERNAL COORDINATION (CD)

FINDING CD-1: The process for identifying, selecting, and deploying the right DoD capabilities for Hurricane Mitch was complex and demanding. The process of translating humanitarian needs into force requirements during disaster operations can be improved.

DISCUSSION: Once the scope of the Hurricane Mitch damage was understood, and the decision made at the highest levels of the USG to conduct a large-scale relief operation including the U.S. military,¹⁵ DoD planners and their civilian colleagues were faced with the task of translating humanitarian needs into deployable capabilities. For example, given the fact that safe drinking water was required in the affected region, and assuming a tasking to DoD, was the appropriate response on the part of the U.S. military to send bottled water via airlift, to deploy epidemiologists to test the water, to provide reverse osmosis water purification units (ROWPU) teams and equipment, to send engineers to dig wells, or some combination of these assets? How much of each capability should have been deployed and how should the assets to be deployed have been configured? Finally, what U.S. military units had the required capabilities?

The actual process of translating assessment data into unit capabilities comprised several discrete steps:

- Step 1: The conduct of the needs assessment, or more accurately the needs assessments, since several organizations (e.g., OFDA, the MILGPs, Ambassadors, JTF commanders, host nations, and perhaps others) were conducting such assessments, not necessarily in an integrated fashion

¹⁵ The following analysis focuses specifically on the process of translating relief needs to force requirements, and assumes that a decision to deploy military assets in response to a foreign disaster has been made. In actuality, the process of translation of requirements to military assets must have been preceded by two prior decision steps: first, a decision by the USG to respond to the disaster at a level that requires military deployment; and, second, a determination that military assets are required in order for the USG to respond effectively to the disaster. Currently, the process for determining the scale of the overall USG response is a-systematic, as elaborated in the sections of this study relating to interagency coordination. A USG decision to use military, rather than or along with, civilian assets in a disaster response should be shaped by guidance in *A National Security Strategy for A New Century* (Ref. 75), which calls for the use of U.S. military forces in humanitarian disasters "when the scale of a humanitarian catastrophe dwarfs the ability of civilian relief agencies to respond, when the need for relief is urgent and only the military has the ability to provide an immediate response, when the military is needed to establish the preconditions necessary for effective application of other instruments of national power, when a humanitarian crisis could affect U.S. combat operations, or when a response otherwise requires unique military resources."

- Step 2: A determination of which of the disaster needs would be met by the USG and which by others, and for the USG response, how much from DoD
- Step 3: A translation of the requirements levied on DoD into military force capabilities and then into forces. One issue was whether it was better for the geographic combatant command to "push" resources to the theater even with an understanding that they all might not be required, or to respond solely to the "pull" of specific requests, and then provide only the specific resources identified as a requirement. A second issue was the way the supported combatant command's requirements were sent to the force providing organizations (e.g., the Joint Staff, USACOM, and others), either as specific units or as military force capabilities.
- Step 4: Selection of which units or, in some cases, elements or even individuals, that would be deployed to the affected area to meet the requirements
- Step 5: Initiation of the process to alert and prepare the military capabilities for deployment and the mission
- Step 6: Movement to the area and to the specific final destinations where the capabilities were to be applied.

In a disaster response environment characterized by urgency to save lives, rapidly changing conditions in the affected region, partial information, multiple responders, media scrutiny, and political pressure, the process of translating needs to capabilities will be inherently complicated, as it was in fall 1998. Under these circumstances, some asset shortages and surpluses, that is inconsistencies between needs and deployable capabilities, will inevitably occur. The issue for DoD is whether and how – regarding, for example, the helicopter shortages encountered in the early days of the Mitch response, and the superfluity of engineering equipment arriving on Central American docks by December – assets can be more effectively aligned with needs. A second issue faced by U.S. military planners is whether the procedure of translating needs to assets can be done systematically, with a minimum of process costs that overburdened commanders and staffs.

U.S. military planners at supported, supporting, and subordinate commands, and at the JTF level, expended a great deal of effort to determine accurately the humanitarian needs in the affected region, and to express those requirements in terms of military capabilities to be deployed. In the main, however, DoD planners faced a gap in doctrine and tools to assist their planning efforts, relying primarily on individual experience and the application of combat planning tools to the HA/DR environment in order to arrive at military asset requirements. In preparing for the Hurricane Mitch response, DoD

planners would have benefited from: (1) USG needs assessments that specified requirements in terms of humanitarian "service modules" that can be translated into civilian or military capabilities; (2) a consequence assessment tool permitting quantifiable estimates of civilian need; and (3) a planning tool to translate the humanitarian requirement into capabilities of U.S. military units.

1. Needs Assessments that Specify Required Capabilities

In the aftermath of Hurricanes Georges and Mitch, DoD received many requests for assistance from USG agencies, based either on assessment missions conducted by those agencies or on requests for assistance forwarded through those USG agencies by other emergency responders. In many instances, the requests were of a general nature, such as the need for water purification equipment, and failed to note whether unique military capabilities (for example, for security, rapid delivery times, trained crews, or other military capabilities) were required. In other instances, the type of assistance requested was clear, but the request failed to specify the latest arrival date (LAD), maintenance requirements, or other information crucial for military planners. DoD planners, who are trained in translating military combat capability requirements into type forces, would have benefited from assessment findings that more clearly specified the types and amount of measurable capabilities that were required to meet the affected population needs.

The use of humanitarian service modules has become increasingly widespread among civilian relief agencies, especially within the UN system, and holds significant potential for enhancing the ability of U.S. military planners to align relief needs with military capabilities. Service modules are pre-designated packages of goods, services, equipment, or skills that are frequently needed in humanitarian assistance operations.¹⁶ When UN or other civilian agencies express their requirements for military or other donor assistance in the precise terminology of service modules (which specify, optimally, support requirements, length of deployment, self-sustainment requirements, and other useful planning parameters), communication between civilian agencies defining requirements and military providers of capabilities is enhanced and process costs during time-critical disasters are reduced. Each package, or module, consists of established

¹⁶ Service modules are described in great detail in draft IDA document D-2349, *Potential Global Partners for Smaller-Scale Contingencies* (Ref. 74). This document lists all current UN service modules.

objectives, specified activities to be performed, and detailed lists of personnel, equipment, and material the package should contain. For example, recognizing that management of incoming relief supplies will be a process common to all relief operations, the UN Office for the Coordination of Humanitarian Affairs (OCHA) has defined an "airfield control" service module that would be required for future operations, and which could be provided, *en bloc*, by donor nation military forces or civilian organizations to assist in the operation.¹⁷ Creating a USG system of service modules, to allow translation of civilian relief needs into quantifiable packages of civilian or military capabilities, could enhance DoD's foreign HA/DR response planning and expedite deployment, in those instances when military assets might provide the appropriate response.¹⁸

2. A Consequence Assessment Tool

Disaster consequence assessment tools, like the Consequence Assessment Tool Set (CATS) developed with funding from FEMA and DoD, provide planners with the capability to estimate damage from a range of natural phenomena. Although such tools currently have limited applicability in many disaster-prone portions of the developing world, their potential as a planning tool was not utilized during the foreign disaster operations in fall 1998. Few military planners are currently aware of their capabilities. [For additional discussion, see Finding CK-2].

3. Planning Tools to Define Unit Capabilities

SOUTHCOM, as the supported combatant command, identified the capabilities it needed to support the HA/DR response based on ongoing assessments and estimates.

¹⁷ The airfield control service module requires the donor to "Plan, schedule, and direct all activities related to the unloading, loading, and servicing of aircraft for a specific airfield on a 24-hours-per-day basis; oversee activities of local contractors or Airfield Ground Handling Team; coordinate with UN Air Planning Center, Flight Operations Center, Movement Control Team, and host nation authorities and humanitarian organizations; be prepared to assist with airfield security."

¹⁸ The discussion of humanitarian service modules in this section is not intended to suggest that U.S. military forces or other national military forces should provide a greater share of the relief services than they currently do, in the aftermath of foreign natural disasters. Many existing civilian agency capabilities, located within the UN system, IOs, or NGOs, should be called upon initially to deliver water, food, shelter, or health care to disaster victims, and should not be routinely supplanted with military assets. Rather, the real value of service modules is the common terminology they provide and their use as a planning tool. Delineation of recurring relief capacities in service module language facilitates expedited provision of military assets in those limited instances where civilian agency capacity is insufficient and must be supplemented by military equipment and/or personnel.

Although the assessment process was incomplete, there was an urgent need to initiate the complex and time consuming force requirement process. SOUTHCOM submitted the request for forces to the CJCS with information copies to ACOM and other organizations in the force provider community. Based on SOUTHCOM's experience in previous HA/DR exercises and its knowledge of which military units and elements were available, the command expressed the requirements as specific elements (e.g., two C-130s) or units such as teams, companies, and battalions (e.g., one Army combat engineer battalion). The JOPES crisis action procedures allow the supported command to use either mission capabilities (e.g., "a capability to lift 400 short tons of cargo per day" or "a capability to replace four 200 meter secondary road highway bridges") or unit requirements. Force providers prefer to receive these requests as capabilities rather than units. Force providers believe they are in the best position to determine which units to select because they have access to information on the joint forces, individuals, and elements that are available; which forces have the needed capability; and which units are most ready and best positioned to deploy.

The Joint Electronic Battlebook (JEB), a planning tool maintained by USJFCOM, provides information on selected unit capabilities and non-unit supply or equipment assets available through DoD sources. Its purpose is to provide readily available information on unit capabilities, equipment, and supply assets to U.S. military planners—an important capability when planning for rapid-onset foreign disasters. However, the current JEB does not organize data in a format—akin to service modules—that is most useful to planners preparing for disaster relief operations. Moreover, most military planners interviewed for this study were not familiar with the capability or operation of the JEB.

The Hurricane Georges and Hurricane Mitch experiences suggest that greater attention to the process and tools for translating disaster assessment data into military unit capabilities should be a DoD priority. This critical translation process is inadequately described or modeled in existing Joint Doctrine.

RECOMMENDATION CD-1-1: The Joint Staff Director for Logistics should ensure that more information on techniques and tools for translating disaster needs data into military capabilities is included in draft Joint Publication 3-07.6, Joint Tactics, Techniques, and Procedures for Foreign Humanitarian Assistance. Although much good information is contained in the draft publication on HA/DR planning and execution, the draft publication is virtually silent on the precise procedure for translating humanitarian relief requirements into deployable U.S. military capabilities.

RECOMMENDATION CD-1-2: The Office of Peacekeeping and Humanitarian Assistance, in conjunction with the Joint Staff J4, should develop a template for assisting USG civilian relief agencies to clarify the RFAs these agencies submit to DoD. Subsequently, the Office of Peacekeeping and Humanitarian Assistance should initiate discussions with OFDA and DoS personnel on how personnel of these agencies can be trained in assessment techniques that will clarify requirements for military assistance during foreign disasters.

RECOMMENDATION CD-1-3: The Office of Peacekeeping and Humanitarian Assistance, in conjunction with the Joint Staff J8 and USJFCOM, should examine the degree to which the CATS assessment tool can be improved to meet the requirements of disaster response planning, identify shortfalls in CATS data relevant to disaster-prone regions, and determine the priorities of geographic combatant commands for CATS capabilities in their respective areas of responsibility. Subsequently, the Joint Staff should develop a plan for disseminating information on CATS to geographic combatant commands and ensure it is used in joint HA/DR exercises.

RECOMMENDATION CD-1-4: The Joint Staff J4 and J8 should examine, in cooperation with OFDA, the feasibility of developing a set of USG humanitarian service modules as a planning tool during foreign natural disasters. Humanitarian service modules developed should be included as part of the basic library of force modules maintained as part of the Joint Operation Planning and Execution System (JOPES) database.¹⁹

RECOMMENDATION CD-1-5: The Office of Peacekeeping and Humanitarian Assistance, in conjunction with the Joint Staff J4 and J8 and USJFCOM, should examine the degree to which the JEB can be improved to assist with foreign disaster assistance planning and execution. Specifically, this study should examine whether the JEB, in its current form, provides DoD planners with sufficient insight into the disaster relief capabilities of U.S. military units, make recommendations for enhancing the JEB to ensure its utility in planning such operations, and incorporate its use in joint HA/DR exercises.

RECOMMENDATION CD-1-6: The Director, Joint Staff, in coordination with the Office of Peacekeeping and Humanitarian Assistance, the combatant commands, and

¹⁹ Force modules are explained in detail in Joint Publication 5-03.1, *Joint Operation Planning and Execution System* (Ref. 76).

the Military Departments, should review the current procedures for determining force requirements when supporting HA/DR operations with a view to clarifying and expediting the process used to identify needed military capabilities and to deploy them to the affected area more rapidly.

FINDING CD-2: During responses to both Hurricane Georges and Hurricane Mitch, critical transport operations to resupply forward staging bases were canceled in order, in theory, to free assets for relief operations. Without adequate supplies, forward staging bases were unable to support relief operations.

DISCUSSION: Naval Station Roosevelt Roads (NSRR), Puerto Rico, and Soto Cano Air Base, Honduras, were extensively used as forward staging bases for U.S. military relief operations during Hurricane Georges and Hurricane Mitch, respectively. Both played critical roles as logistics and transport hubs, despite both suffering significant damage from the respective storms. The principal resupply for both bases prior to the hurricanes had been weekly channel flights from CONUS.

During hurricane relief operations in fall 1998, the facilities at NSRR and Soto Cano Air Base were damaged by the storms to a degree that required emergency resupply to restore them to operational conditions. In addition, the operational tempo at these facilities expanded significantly, placing an additional burden on available equipment and requiring increases in resupply to maintain a livable environment for troops (and, in the case of NSRR, dependents) stationed there and to support the relief operations. For example, NSRR had to rely entirely on generators to supply all base electricity in the days following Hurricane Georges, since the Puerto Rico power grid was disabled. Large numbers of these generators, which were under constant stress, began failing, and immediate spare parts were required to maintain essential services such as navigation aids at the NSRR airfield.

At the height of the Hurricane Georges and Hurricane Mitch operations, channel flights were canceled to both NSRR and Soto Cano Air Base, to provide airlift for relief supplies intended for disaster victims. Both facilities were required to request resupply through alternate channels, only to discover that base resupply had been assigned a lower priority than direct relief supply flights. As a result, both facilities were threatened with severely limiting, or even ceasing, operations – a result that would have undercut the very relief operations the channel flight cancellations were intended to support. In addition, the cancellation of regular resupply flights caused damage to morale at the bases. In the words of one officer at JTF Bravo, the base personnel felt they had been “shunted aside,” at a time when many were volunteering to fill sandbags in driving rain and undertake similar tasks to keep the base in operation as a relief logistics hub.

RECOMMENDATION CD-2-1: During foreign natural disaster relief operations, geographic combatant commands should request that the Joint Staff and

TRANSCOM assign the highest priority for supply flights supporting U.S. military forward logistics bases – or units stationed at foreign bases that are serving in this role – in order to ensure sustained capability of these bases to support relief operations.

FINDING CD-3: HA/DR operations often require capabilities that are retained by the Military Departments to perform functions assigned under the U.S. Code, and these capabilities are not generally visible to the unified combatant commands.

DISCUSSION: There are a number of units, retained by Military Departments to perform duties assigned under the U.S. Code, that have unique capabilities sought during HA/DR operations. These units could potentially benefit U.S. military units assigned HA/DR missions, host nation personnel requiring training in such specialized disciplines, and/or disaster victims themselves. Examples include the Army Special Medical Augmentation Teams (SMART) and Combat Stress Control Detachment (CSCD), U.S. Marine Corps Shock Trauma Platoons (STP) and MEF Liaison Elements (MLE), and Navy Special Psychological Rapid Intervention Teams (SPRINT). Currently, these highly specialized units and their potentially valuable contributions during HA/DR operations are not widely known at the staffs of geographic combatant commands.

During Hurricane Mitch operations, some of these assets were identified and deployed to the affected area, but primarily through fortuitous knowledge by individual SOUTHCOM staff rather than through transparent processes available to planning staffs. This information would be useful for all unified combatant command staffs and the Joint Staff, so that the full range of DoD capabilities can be provided in HA/DR operations.

Some of the highly specialized medical teams deployed to the area found upon arrival that the JTF staffs had limited knowledge of their roles and capabilities and potential contributions. Those responsible for dispatching such teams to the disaster area did not ensure that those downrange were briefed adequately in advance on what these teams could do.

RECOMMENDATION CD-3-1: The Office of Peacekeeping and Humanitarian Assistance, in conjunction with the Joint Staff J4 and JFCOM, should ensure that all units retained by military departments but with specialized skills relevant to HA/DR operations are included in the Joint Electronic Battlebook (JEB), along with a full description of the unit's capabilities and specialized requirements.

RECOMMENDATION CD-3-2: The Office of Peacekeeping and Humanitarian Assistance should disseminate information on Service-retained units with specialized HA/DR skills to joint and Service training institutions, with the recommendation that information on such units be included in SSC, MOOTW and other relevant training courses.

INTERFACE WITH HOST NATIONS (CH)

FINDING CH-1: During Hurricane Mitch, DoD and other USG officials in the affected countries made efforts to ascertain the assistance priorities of the affected governments. However, USG responders sometimes interfaced with different agencies of the host nation governments, leading to inconsistent analyses of host nation needs and priorities. U.S. military forces at the disaster scene sometimes gravitated to local military organizations as contact points, potentially diminishing the role of local civilian agencies.

DISCUSSION: U.S. military forces responding to Hurricane Mitch effectively coordinated with government authorities in the affected countries. Unlike the situation in some conflictive SSCs, where government authority may be absent in all or part of a nation, the governments of the Central American nations were still firmly exercising control in all parts of their national territory. MILGPs and deployed JTFs recognized this fact and took steps to discern national government priorities in the relief operation. Such close coordination with local authorities should characterize U.S. military involvement in rapid-onset foreign natural disasters.

In the aftermath of natural disasters, host nation agencies will attempt to establish coordination points with disaster responders, civilian and military, arriving from other nations. These host nation crisis action centers or similar coordination points may not be fully functional, especially when national capitals, other government centers, or host nation communications nets have themselves sustained damage from the natural disaster. Moreover, host nation government agencies officially tasked with providing assessments may be overwhelmed by the enormousness of the disaster, or bureaucratically overridden by *ad hoc* structures. During Hurricane Mitch, individual USG agencies attempting to respond to the disaster often interfaced with different host nation agencies, deriving different pictures of the relief task, based on the host nation source. For example, in Guatemala, USAID officials depended primarily on NGOs for assessment data, while MILGP personnel relied on the Guatemalan government's emergency preparedness agency. In Honduras, USG personnel attempted to interface with Honduran officials at two different crisis action centers maintained by the Honduran military and by the Honduran civilian disaster response agency, respectively. In order to obtain a consolidated picture of host nations' assessment of data and relief priorities, USG agencies responding to the crisis need to identify authoritative host nation information sources and develop, within the USG agencies on the scene, appropriate coordination and validation systems.

A particularly sensitive aspect of interface with disaster affected governments occurs when U.S. military forces rely on military-to-military contacts to establish relief priorities. In many of the nations affected by Mitch, indigenous military forces retained an important – in some cases the leading – domestic disaster relief capacity. In some of the same Central American nations, however, U.S. foreign policy was striving to buttress the primacy of civilian control, in general, within the political arena. In practical terms, international disaster responders were faced with a difficult choice: work with the local military to maximize effectiveness in disaster response, or work with the designated civilian agency – which, sometimes, had less operational capacity – in order to emphasize civilian control.

RECOMMENDATION CH-1-1: The Joint Staff, when developing doctrine for foreign disaster response, and geographic combatant commanders, when issuing guidance to subordinate commanders following a natural disaster, should emphasize the requirement that all U.S. military forces on the scene of the disaster take steps to ascertain local government priorities and requirements when completing assessments or establishing mission priorities.

RECOMMENDATION CH-1-2: JTF commanders, MILGPs, or other representatives of the geographic combatant commander on the disaster scene should work with representatives of USG civilian agencies – including the local American Embassy and OFDA DART teams or others deploying to the AO – (1) to establish a unified system for covering all host government information sources and (2) to reconcile, consolidate, and validate data and requests for assistance generated by the host nation before passing that information to higher authorities within the USG.

RECOMMENDATION CH-1-3: When deciding on the nature of military-to-military interface in the wake of a natural disaster, MILGP and JTF commanders should consult with the USG Country Team on U.S. foreign policy issues relating to civil-military affairs in the host country. Commanders should give appropriate weight, when relevant, to the USG policy on supporting the primacy of civilian leadership within the host government.

FINDING CH-2: During Hurricane Mitch operations, officials in affected nations appreciated the deployment of substantially self-supporting disaster response units by the U.S. military, which reduced host governments' burden to support the responders.

DISCUSSION: After major natural disasters, local infrastructure and supply systems are likely to be disrupted, and shortages of critical materiel – fuel, drinking water, building supplies – are common. International organizations responding to natural disasters – civilian or military – can exacerbate these disruptions and shortages by depending on the local economy for logistics support. Local fuel purchases by international organizations, for example, can decrease availability of fuel for local NGOs, or raise the price beyond what is affordable to host nation individuals and institutions. In some cases, international agencies' reliance on local experts for technical assistance and translation services – and the payment of salaries that are high by local standards – can remove key professionals from the host nation pool of experts, disrupting self-help efforts. During Hurricane Mitch, U.S. military units generally received high marks for being self-sustaining and for not putting additional strain on local support capacity. On the other hand, in some instances, or at some point during the recovery, local procurement can boost an economy recovering from a disaster, and should be part of the JTF commander's plan. Careful analysis is required to determine whether local procurement will disrupt or assist the host nation. It should be noted that, in much of Central America, in-place MILGP or DATT staffs were available to assist in assigning and facilitating local support capabilities – a support system that may not be available in many disaster locations.

RECOMMENDATION CH-2-1: When determining the size, composition, and support requirements of units deploying to conduct disaster relief operations in austere environments, staffs of geographic combatant commands, supporting commands, and subordinate commands should make an early assessment of the local capacity to provide logistical support to the deploying units, and place a premium on configuring self-sustaining units.

RECOMMENDATION CH-2-2: When determining the size, composition and support requirements of units deploying to conduct disaster relief operations in austere environments, staffs of geographic combatant commands, supporting commands, and subordinate commands should make an early assessment, in conjunction with U.S. Embassy and other USG civilian disaster response officials, of whether local procurement

of logistical support items will assist or harm the local economy in the affected region. These commands should provide deploying units with guidance on how local procurement might support or undercut the overall relief effort. Subsequent assessments should be made to determine when the local capacity would benefit from procurement by foreign relief organization.

FINDING CH-3: Between crises, DoD support can strengthen local disaster response and preparedness activities in countries with a history of natural disasters, as SOUTHCOM did prior to and after Hurricane Mitch. DoD support should be linked with the efforts of other USG agencies.

DISCUSSION: The capabilities of host government disaster response agencies encountered by U.S. military forces during Hurricane Mitch varied significantly. Some of these organizations turned in solid management performances, within their resource constraints, while others added little to the overall disaster relief effort. The level of investment in these organizations by the geographic combatant command, by other USG agencies, and by other foreign donors was one of the determinants of their performance. For example, Central American government disaster response agencies that benefited from prior OFDA capacity building efforts²⁰ and from participation in DoD exercises in the region gained from these experiences. Useful assistance from geographic combatant commands to host nation disaster response agencies can include donation of critical equipment, especially information management systems at agency headquarters and communications equipment to link agencies with their monitors in the field; sponsorship for participation in regional exercises; and nation-specific training, including either providing technical experts from the U.S., tours to USG facilities, or support for national-level command post exercises (CPX). Within the USG interagency process, however, there exists some concern that DoD efforts to improve host nation disaster response capabilities are not sufficiently coordinated with capacity building programs developed by OFDA or USAID missions in those countries.²¹

RECOMMENDATION CH-3-1: As part of their theater engagement strategy, geographic combatant commands should assign a high priority to programming training, exercise, and OHDACA funds to enhance local disaster preparedness capacity in disaster-prone nations. Among high priorities are (1) improving the management and communications capacities of agencies tasked with disaster response; (2) inviting these agencies to participate in regional exercises; and (3) designing country-specific CPXs.

²⁰ OFDA notes that its Disaster Management Training Program (DMTP), which commenced in 1989, has trained more than 17,000 participants from disaster-prone countries, primarily in Latin America and the Caribbean (Ref. 71).

²¹ Specifically, officials at USAID have questioned efforts by MILGPs and other SOUTHCOM personnel to link disaster response agencies from nations in the AOR with programs of the USG Federal Emergency Management Agency (FEMA). From the perspective of some USAID officials, any such linkages should be carefully coordinated with ongoing USG foreign assistance programs with the affected countries.

RECOMMENDATION CH-3-2: Planning staffs at geographic combatant commands, and MILGPs at U.S. Embassies, should ensure that efforts to improve the capacity of host nation disaster response agencies are coordinated with similar programs implemented by sister USG agencies, including OFDA and USAID missions.

FINDING CH-4: Large-scale natural disasters such as Hurricane Mitch have major political implications, as well as humanitarian impacts, in the affected nations. During the hurricanes in SOUTHCOM's AOR in fall 1998, the geographic combatant command and U.S. forces deploying to the AO confronted operational decisions with significant political implications within the host countries. Insufficient attention to these issues – which are likely to surface in future DoD responses to major, rapid-onset natural disasters – could have led to foreign policy or media relations difficulties, complicating the primary mission: meeting the relief needs of storm victims.

DISCUSSION: The arrival of international relief agencies in a country following a large-scale natural disaster can be a major political event, strengthening or weakening incumbent governments or other political forces. This phenomenon is heightened when U.S. military forces arrive in a nation experiencing tumult. The locales to which U.S. forces are deployed, how quickly they arrive, the visibility of their armaments, relations with local civilians, and related operational matters may all become political issues within the affected nation. From SOUTHCOM's experiences with hurricane response in fall 1998, it is possible to pinpoint a number of operational lessons that merit special focus by deploying U.S. forces in order to avoid political or media issues that could detract from the overall humanitarian mission. Generally, DoD personnel displayed appropriate responses when confronted with these issues during Hurricane Mitch operations. Lessons include the following:

- **Locate important headquarters with appropriate awareness of regional political implications:** In multi-nation crises, government officials in each affected nation are likely to foresee benefits in having the U.S. military headquarters in the affected region located within their own national boundary. The decision to locate JTF Aguila headquarters in El Salvador, which made sense for a number of logistics and transportation reasons, raised several issues for the JTF commander. First, some Guatemalan and Nicaraguan officials questioned the choice; second, some Salvadoran officials questioned why the location of the command post did not bring more benefits to their nation.
- **Be prepared to respond to needs generated by government officials both at the national and local levels, and to reconcile differences:** U.S. forces deploying to a major crisis may encounter competition for resources and attention between local governments and national governments, especially when different parties or factions control the various governmental levels. During the Hurricane Mitch response, relief priority lists developed by host government officials in national capitals sometimes differed from what

seemed important to local officials. The latter often approached JTF unit commanders operating in their locale directly with compelling requests for assistance, requiring coordination of requests between the levels of the host government.

- **Be prepared to confront allegations of inequities or even corruption in the distribution of relief supplies:** In Central America following Hurricane Mitch, U.S. commanders regularly received reports of less than equitable distribution of relief supplies in heavily damaged areas. Although it may be impossible to quell such concerns completely, U.S. forces took special steps to ensure the use of ostensibly impartial distribution networks, like local religious leaders, and to establish a process for handling complaints of this type.
- **Be sensitive to the concerns of local military forces, who may feel challenged by the presence of U.S. armed forces personnel, especially where military-to-military links were not established prior to the crisis:** In the case of Nicaragua, for example – where history had forestalled U.S. military cooperation for many years and where lingering suspicions of USG intentions were still harbored by opposition figures – JTF commanders welcomed Nicaraguan military liaison officers into their headquarters, diminishing concerns about U.S. ulterior motives for the humanitarian deployment.
- **Pay attention to the environmental impact of deploying forces, especially waste disposal:** Recognizing legitimate concerns over environmental degradation caused by the temporary deployment of U.S. forces, commanders hired local contractors to dispose of waste generated by JTF units.
- **Anticipate resistance to requests for data that might hurt tourism:** Following Hurricane Georges, assessment data were difficult to obtain from some Caribbean island nations heavily dependent on tourism, raising concerns that the storm's effects were being downplayed for economic reasons, i.e., so as not to discourage tourists. USG assessment personnel were required to balance accurate damage reporting with host government sensitivities in this regard.

Since this set of issues might cause problems in the bilateral relations between the U.S. and the affected nations, or might spur media interest, it is worth highlighting these issues for commanders of future disaster relief operations.

RECOMMENDATION CH-4-1: Planning staffs at geographic combatant commands should alert deploying JTF commanders and staffs about issues of potential political sensitivity in the relief effort, including the items identified in the discussion above.

RECOMMENDATION CH-4-2: The Joint Staff should incorporate discussion of the issues noted in the discussion above in joint publications on HA/DR operations, especially the draft publication on *Joint Tactics, Techniques, and Procedures for Foreign Humanitarian Operations*, Joint Publication J-07.6.

FINDING CH-5: U.S. military commanders tasked with disaster assistance missions should allocate time and resources for information exchange with local communities and local leaders. Information exchange can facilitate assessment, improve the relief effort, build trust within local populations, and enhance force protection.

DISCUSSION: JTF Aguila commanders reported that they devoted considerable time to meeting with local government officials and religious and other community leaders in their AOR. During these meetings, U.S. military personnel conveyed information about their mission, concept of operations, and needs, and listened to community priorities. These meetings helped to ease initial suspicions about U.S. armed forces encountered in some areas, and to build bonds of trust between U.S. forces and local populations. The dialog yielded useful information about local political and security issues, supporting U.S. commanders' force protection priorities.

RECOMMENDATION CH-5-1: U.S. military commanders operating in disaster relief environments should plan to allocate time to meeting with local government officials and local community leaders.

INTERAGENCY OPERATIONS (CI)

FINDING CI-1: Prior to and during the Hurricane Mitch disaster, the placement of DoD liaison officers (LNOs) at key USG civilian agencies, as well as the placement of civilian agency LNOs at key DoD C2 nodes, paid high dividends.

DISCUSSION: During the Hurricane Mitch response, a number of LNOs were exchanged among USG civilian and military organizations. The Joint Staff LRC dispatched LNOs to OFDA's Operations Center, for example, as did the National Guard Bureau (to assist with arrangements for Denton Amendment flights).²² OFDA sent a member of its military liaison staff to SOUTHCOM headquarters, and another staff member to JTF Bravo headquarters at Soto Cano Air Base, Honduras. All reports indicate that these LNOs substantially improved communications and coordination. Stationing LNOs at important disaster response decision nodes within the interagency organization prior to emergencies reportedly also pays high dividends. In past years, for example, OFDA assigned an LNO to CINCPAC headquarters with good results, and Reserve Component civil affairs officers are currently tasked to deploy with OFDA personnel to stand-by locations in the eastern Caribbean prior to hurricane season. However, the current array of civilian-military disaster response LNOs is not comprehensive or systematized. No formal doctrine or process guides USG disaster response agencies in assigning LNOs within the USG or prescribes their necessary qualifications, and liaison among U.S. military forces and UN organizations, NGOs, bilateral donors and other non-USG civilian responders remains haphazard.

RECOMMENDATION CI-1-1: The Office of Peacekeeping and Humanitarian Assistance (PKHA) should meet with the Department of State, OFDA and other civilian agencies engaged in international disaster response to determine (1) the most critical LNO positions and skills required for optimizing USG interagency coordination prior to and during disasters; (2) the most critical LNO positions and skills required for coordinating with non-USG disaster responders; (3) the cost of providing essential LNOs; and (4) a plan for placing trained LNOs in critical positions. As part of this analysis, PKHA should examine whether Political Advisor (POLAD) positions at geographic combatant commands could be tailored to fulfill this function.

²² Additional information on issues relating to the use of the Denton Amendment is included in Finding PA-3 in Appendix B of this study.

FINDING CI-2: Hurricane Mitch illustrated that the USG interagency system lacks sufficient contingency planning or operational planning capacity for large-scale, rapid-onset natural disasters, especially those affecting more than one nation.

DISCUSSION: Currently, the USG interagency process provides certain stand-by capacities for responding to natural disasters overseas, such as stockpiled relief supplies and OFDA's DART teams, which are prepared to deploy on short notice to assist with relief management. However, no interagency OPLANS or FUNCPLANS are prepared for such operations, resulting in reactive interagency processes. During the Mitch crisis, even after the extent of the crisis became known, no USG agency had overall responsibility for preparing a plan of operations. SOUTHCOM's three-phase concept of operations filled the planning gap, but as an expedient rather than a process doctrinally agreed upon by the interagency participants ahead of time. Civilian organizations that might reasonably be expected to prepare such contingency or operational plans have little staff capacity to undertake this effort. Although the USAID Administrator is designated by a 1993 National Security Council memorandum (Ref. 52) as the President's "Coordinator" for international disaster response, the Administrator has no operational planning staff assigned to this purpose. The interagency PDD-56 (Presidential Decision Directive 56) process outlines a planning template, but does not provide staff resources to accomplish actual operational planning.

RECOMMENDATION CI-2-1: The Secretary of Defense should recommend to the National Security Adviser the establishment of a foreign disaster planning staff, to be located within the National Security Council staff, the Department of State, or USAID. Such staff would be responsible for developing country-level and regional disaster response contingency plans, and developing operational plans once a disaster has been formally declared by the USG.

FINDING CI-3: Command and control of USG international disaster assistance is diffuse. There is no single point of accountability within the interagency system, and no formal doctrine governs the USG response to foreign disasters. During the Hurricane Mitch response, the absence of a management focal point and clear interagency doctrine hampered interagency coordination, and delayed effective response.

DISCUSSION: During Hurricane Mitch, the chain of command for USG crisis response was unclear. U.S. Ambassadors asserted guidance authority over USG resources entering their countries. A high-level working group at the Department of State convened interagency meetings on aspects of the USG response. OFDA, drawing upon authority conferred on the head of USAID by a 1993 NSC memorandum, claimed management control over portions of the disaster response. NSC interagency meetings impelled a substantial agenda for federal response agencies. Last, but certainly not least, CINCSO's concept of operations and command of significant U.S. forces constituted a distinct center of gravity for USG operations. Coordination occurred among all these nodes of activity following Hurricane Mitch, but this coordination resulted from workarounds and individual initiative rather than a clear, shared coordination template.

An uncertain chain of command for managing foreign disasters is compounded within the USG by an absence of unified interagency doctrine. DoD has developed or is developing a number of doctrinal publications that specify procedures for the management of foreign disasters. Individual civilian offices, like OFDA, have specified procedures for certain aspects of USG disaster response, such as the process for ambassadorial disaster declarations. For domestic disasters, FEMA's *Federal Response Plan* provides a useful guide to how interagency relationships in emergency response might be configured and funded. However, no transparent, pre-agreed interagency template sketches the overall USG foreign disaster response process, and assigns roles and responsibilities to USG agencies. Even fundamental steps in the disaster response process, such as requests from civilian agencies for DoD assets, are not standardized. During Mitch, confusion over respective agency roles colored the USG response, especially in the first critical days after the hurricane struck. Key military leaders had little knowledge of OFDA or its role; key civilian leaders had limited knowledge of DoD organization or capabilities. For example, the JTF Aguila commander was not aware of the overall responsibility of OFDA prior to his arrival in the AOR. No significant progress has been made since 1998 in better structuring the interagency disaster response process.

RECOMMENDATION CI-3-1: The Secretary of Defense should recommend to the National Security Adviser the establishment of an interagency working group to prepare a federal response template for foreign disasters. The federal response plan should define a clear-cut chain of command for foreign disaster response, from the President to the country level, with single points of contact at important nodes in the execution process. The chain of command should encompass regional, as well as country-specific, disasters.

RECOMMENDATION CI-3-2: The Secretary of Defense should further recommend that an interagency working group prepare a federal response template for foreign disasters. The working group should review the interagency system established by the domestic *Federal Response Plan* as a model for interagency coordination during foreign disasters, making appropriate adjustments for operations in the international milieu.

RECOMMENDATION CI-3-3: The Office of Peacekeeping and Humanitarian Assistance should develop, in consultation with the Joint Staff and geographic and functional combatant commanders, a standard form and process for requests for DoD assistance to civilian agencies during natural disasters, domestic or foreign. A standardized Request for Assistance (RFA) form should be developed and its use institutionalized. [See also Finding LS-2].

FINDING CI-4: Preparing a list of disaster-prone countries, based on input from all USG agencies active in disaster response, would facilitate contingency planning, preparedness, and training, and help establish a higher priority for those nations for accessing information and intelligence sources.

DISCUSSION: As noted elsewhere in this study, USG agencies generally are not engaged in interagency contingency planning for foreign natural disasters. One of the impediments to such planning is the absence of a priority list of countries that would merit a large-scale USG response following a natural disaster.

In addition, as noted in this study, disaster-prone countries that are not otherwise of significant national security interest are unlikely to receive high priority for USG mapping activities, photography, or other technical information gathering or intelligence activities. Currently, with some limited exceptions (such as OFDA and DoD collaboration on pre-positioning staff in the Caribbean Basin prior to hurricane season), USG disaster response agencies have limited shared vision of those countries that should be the focus of disaster preparedness activities, disaster risk information sharing, or disaster training activities.

RECOMMENDATION CI-4-1: The Office of Peacekeeping and Humanitarian Assistance should convene a meeting of USG agencies active in foreign disaster response, for the purpose of developing a priority list of disaster-prone nations where frequency of natural disaster occurrence, potential loss of life and property, and USG interests would likely compel a large-scale USG disaster response operation. The list developed through this process should serve as the basis for training exercises, contingency planning, and enhanced access to information and intelligence data.

COMMUNICATIONS AND COMPUTERS (CK)

FINDING CK-1: Command, Control, Communications and Computers (C4) were critical to the success of the HA/DR response for both Hurricanes Georges and Mitch, but relief operations revealed a number of systemic issues that face U.S. military units during such disaster relief operations. C4 planning and implementation to address these gaps were not sufficiently comprehensive or integrated.

DISCUSSION: Many facets of the DoD response to Hurricanes Georges and Mitch depended on a solid foundation of C4 systems. However, planning to establish a unified C4 system architecture to underpin relief operations was not comprehensive. Individual units had functioning C4 equipment and systems, but the overall response to the disasters revealed gaps and weaknesses. In part, C4 problems were a function of the environment in which relief operations took place – one common to many foreign disasters. Host nations had relatively limited C4 capabilities prior to the hurricane, and the storm damaged much of the existing equipment and caused power outages disrupting available networks.

C4 issues that emerged during the fall 1998 disaster relief operations are likely to be encountered by DoD forces during future HA/DR missions. They include the following:

- **Maintaining Existing C4 Capability at Forward Stationed Locations:** It was essential to maintain existing C4 capabilities at locations affected by the storm. The existing C4 capability at JTF Bravo, stationed at Soto Cano Air Base, was a critical asset for the DoD response to Mitch. Restoration of storm damage was assigned a high priority. During the storm, the C4 capabilities of JTF Bravo remained fairly robust, but actions had to be taken to protect generators that were threatened by floods. During Hurricane Georges, NSRR experienced loss of commercial electrical power and its emergency power generation capacity could not support the military and dependent population. In addition, refueling the emergency power generators for the regional FAA air traffic control radar was also a high priority task of NSRR.
- **Establishing Connectivity:** Connectivity had to be established between the various headquarters and deploying units. Given the austere environment in Central America, units deploying to form JTFs in the AO required communications capabilities to connect to higher headquarters and sufficient power to operate these systems. The C4 and power generation capabilities of the Deployable Joint Task Force Augmentation Cell (DJTFAC) were critical for JTF Aguila. The DJTFAC, however, experienced significant C4

shortfalls. It lacked dedicated and secure J2 links, and it had no capability to link to the Global Command and Control System (GCCS) to enable the staff to develop time-phased force deployment data (TPFDD) or to provide in-transit visibility (ITV). The DJTFAC also experienced intermittent communications connectivity and unreliable tactical satellite (TACSAT) connections. Highly specialized elements, such as medical units that relied on information and diagnoses from installations in the U.S., required more robust C4 capability than what was deployed in order to accomplish their tasks. For example, a Medical Communications, Control, Computer Team (MC3T) to link medical humanitarian assistance field missions to the 86th Combat Support Hospital was required, but not deployed.

- **Connectivity with USG Civilian Agencies:** Interoperability between DoD C4 systems and those of USG civilian agencies such as OFDA and the U.S. Embassies was limited. Military communicators had little visibility of civilian agency communications capabilities or needs and that led to *ad hoc* coordinating mechanisms to establish necessary exchanges of information. Interoperability between the DoD systems and those used by other USG agencies is critical in HA/DR operations, and also important in other smaller scale contingency operations.
- **Breakdowns in Fixed Telephone Systems:** JTF personnel tried to use the local fixed telephone systems during their operations in Central America, but outages and interruptions were common. Cellular phones became very important during the early response period and remained so for the remainder of the operation. Ensuring the viability of the generators (including their refueling) at the cell phone antenna relay points, often in remote locations, were a priority mission for the JTFs. Email and the Internet proved to be valuable means of communicating between sites, although these means were not incorporated into a JTF or SOUTHCOM network architecture in the AOs.
- **Existing C4 Capabilities' Influence on Stationing the JTF Headquarters:** C4 capabilities in El Salvador were the most extensive in Central America prior to Hurricane Mitch and suffered relatively little damage during the storm. This factor was instrumental in the selection of that location as the site of JTF Aguila headquarters.
- **JTF Afloat C4 Limitations:** During Hurricane Georges, the commander and staff of JTF Full Provider deployed aboard USS *Bataan*, which served as the flagship. The ship had inadequate C4 capacity, lacking super-high frequency (SHF), Secure IP Routed Network (SIPRNET), Non-Secure IP Routed Network (NIPRNET), or Defense Switched Network (DSN). These shortfalls required extensive *ad hoc* solutions using other systems.

RECOMMENDATION CK-1-1: The Director, Defense Information Systems Agency (DISA), should conduct a study of DoD C4 support capabilities for HA/DR. This study should identify the key nodes where connectivity should be established at the tactical, operational, and strategic level to coordinate the USG response, and describe the means that should be used by the geographic combatant commands for achieving interoperability between DoD C4 systems and those used by other agencies of the USG, as well as the host nation agencies and other organizations likely to be involved in an international response to a disaster, especially in areas where disasters may further disrupt fragile local capabilities. The results of this study – a generic C4 architecture – should be incorporated into appropriate DoD FUNCPLANs.

RECOMMENDATION CK-1-2: DoD FUNCPLANs should include actions needed to repair damage caused by disasters to the C4 systems and power sources at forward deployed locations. The plans should also identify the type of resources that will be needed to offset the damage, and ensure these requirements have high priority during the planning and execution of such operations.

RECOMMENDATION CK-1-3: As called for in the current SOUTHCOM FUNCPLAN, JTF commanders tasked with HA/DR missions should assign a high priority to the establishment of a Joint Communications Control Center (JCCC) to manage the C4 infrastructure in the JTF Joint Operations Area (JOA).

RECOMMENDATION CK-1-4: The Director, Defense Information Systems Agency (DISA), should identify the C4 requirements needed to support JTFs operating afloat during HA/DR or other contingency operations and, in coordination with the Department of Navy, identify the ships that are likely to be tasked for this mission. The director should recommend to the Chairman, Joint Chiefs of Staff, that these ships be properly equipped.

FINDING CK-2: Models to predict the full extent of storm damage comparable to that caused by Hurricane Mitch are not currently available. Such models would assist USG civilian and military planners with anticipating the severity of these storms and the types of responses that will be required when disasters occur.

DISCUSSION: The ability to predict damage from a storm such as Mitch is essential to planning a rapid and effective disaster response. The USG damage prediction capability existing at the time of the Mitch disaster was primarily the Consequence Assessment Tool Set (CATS).²³ CATS, which was built primarily to predict the impact of domestic disasters on U.S. infrastructure and victims, is potentially a useful tool for anticipating damage and relief needs in other regions, such as Central America. Its utility during Hurricane Mitch, however, was constrained by several factors. First, the structure of the CATS hurricane model emphasized the effects of high winds and tidal surges – elements that cause the most damage in traditional hurricanes. Although the U.S. National Weather Service (NWS) and National Hurricane Center (NHC) predictions of Mitch also focused on the potentially destructive winds, the greatest impact of the storm was caused by heavy and continuous rain and subsequent flooding. A second limitation of the model is the use of U.S. construction standards and data to model its structural damage predictions. Significant differences in construction techniques and materials used for houses and buildings in other regions of the world limited the utility of the model during Hurricane Mitch. The third constraint on the use of CATS is its reliance on extensive data for preexisting conditions in the disaster area and on satellite-generated data, especially to support its flood model. Often, such data are simply not available in disaster-prone parts of the world.

These constraints notwithstanding, CATS and other modeling tools continue to be used in DoD exercises and contingency response planning, and have the potential of significantly aiding USG civilian and military planners, especially as better data become available in likely overseas disaster areas. USAID and other donor nation development agencies continue to support flood-risk mapping and other disaster preparedness activities in countries at risk of natural disasters. Currently, USAID is supporting a flood-risk

²³ CATS was developed through funding by the Federal Emergency Management Agency (FEMA) and the Defense Threat Reduction Agency (DTRA). CATS is a software package that combines physical effects models, digital databases, and a Geographic Information System (GIS) to estimate damage from a range of natural and manmade phenomena.

mapping project in Honduras, which will produce a 50-year flood inundation map for major streambeds.

RECOMMENDATION CK-2-1: The Office of Peacekeeping and Humanitarian Assistance, in conjunction with the Joint Staff Director for Force Structure, Resources, and Assessments, and U.S. Joint Forces Command, should develop a database for planners at geographic and functional combatant commands containing information on CATS, information on other models for predicting disaster damage being developed under the Global Disaster Information Network (GDIN), studies in predicting natural disaster effects, and the availability of UN and foreign databases underpinning disaster modeling. This database should also contain information on how USG or other civilian imaging technology can be applied to predicting storm damage and planning the appropriate response.

RECOMMENDATION CK-2-2: Staffs planning HA/DR exercises at geographic and functional combatant commands should regularly incorporate disaster modeling tools and related data issues into the exercise scenarios, with the objective of increasing staff awareness of and facility with modeling technology, and to identify data and methodological improvements that are necessary.

INTERFACE WITH NON-USG ORGANIZATIONS/GOVERNMENTS (CN)

FINDING CN-1: DoD coordination with donor nations²⁴ offering assistance, including their military forces, was not effectively accomplished during the Hurricane Mitch response. Absence of standardized coordination frameworks and, to a lesser degree, gaps in USG doctrine contributed to this problem. Several models of donor nation coordination merit examination.

DISCUSSION: As is common following highly publicized natural disasters, many foreign nations offered assistance in the Hurricane Mitch response, including assistance from their respective military forces. Seeking a coordinating structure through which to provide assistance, and recognizing SOUTHCOM's significant presence in the AO, military elements from donor nations familiar with the region often contacted DoD personnel, either in Miami or at JTF Bravo headquarters, with offers of transport, goods, or personnel.

Current USG/Department of State guidance provides that offers to cooperate in the relief effort from donor nations should be offered bilaterally, that is, from the foreign government through diplomatic channels to the U.S. government. Although this system made sense conceptually, it did not reflect the reality of allied forces operating in the AO, which preferred in-theater coordination directly with military colleagues from the United States. The DoD coordination process through Washington required French and British commanders already deployed in the AO, for example, to contact Paris or London so these capitals could contact Washington, rather than making contact directly with DoD personnel in the disaster-affected region. This process caused confusion and, in some cases, frustration. Although a degree of donor coordination was achieved in the AO through the exchange of liaison officers and informal meetings, establishing these *ad hoc* measures required time.

One model of how coordination might be achieved among donor nations present in a disaster-prone region is provided by the Eastern Caribbean Donor Group for Disaster Management (ECDGDM), based in Barbados. This organization's Operations Order spells out procedures for combined assessment and response. Recognizing that they will

²⁴ By "donor nations" or "bilateral donors," this study refers to those countries, other than the United States or the affected country itself, that may contribute assets to the disaster relief efforts. Donor nations can include neighbors of the disaster-affected nation or countries outside the region that contribute relief supplies or forces. Contributions of donor nations may be made directly to the affected country or funneled through UN, IGO, IO, or NGO intermediaries.

be required to work together during a disaster, the ECDGDM has established protocols for disaster response (Ref. 72), and made assignments for certain tasks to be accomplished during the response.

RECOMMENDATION CN-1-1: The Office of Peacekeeping and Humanitarian Assistance should initiate discussions with USG interagency colleagues to clarify USG policy on the proffering of disaster relief assistance from donor nations to foreign nations, when the offer is made between allied and U.S. military forces at the disaster scene. USG policy should strive to facilitate combined operations to save lives or provide other critical assistance without a requirement for diplomatic clearance.

RECOMMENDATION CN-1-2: Geographic combatant command planning and operations staff should examine the Eastern Caribbean Donor Group Operations Order as a possible management model for disaster-prone regions where allied or other bilateral forces are operating. CINCs should consider establishing, participating in, or supporting similar regional donor coordinating bodies to facilitate collaboration during disaster response.

FINDING CN-2: U.S. military forces, whether at geographic combatant command headquarters or in the field, had little knowledge of UN personnel, support systems, or coordination mechanisms operating in the affected countries during the Mitch relief effort.

DISCUSSION: Although the UN system for responding to large-scale natural disasters is complex and has varied widely in its degree of effectiveness, the UN can bring substantial resources to disaster situations. Many UN agencies have experienced personnel located in disaster-prone countries, maintain stockpiles of relief supplies, and are able to dispatch backup staff from their headquarters to a disaster site. The United Nations Development Program (UNDP) is the agency within the UN system responsible for natural disaster prevention, preparedness and mitigation. UNDP country level managers, or "Resident Representatives," coordinate UN relief and rehabilitation efforts within the affected country. In addition, the UN's Office for the Coordination of Humanitarian Affairs (OCHA) manages several multi-lateral coordination mechanisms, such as the Military and Civil Defense Assets (MCDA) Register. The MCDA Register provides a comprehensive list of disaster relief capacities and services that may be available from donor nations' militaries or civilian agencies, as well as from international organizations. Delivery of selected MCDA assets could meet part of the needs of the affected populations, reducing the requirement for DoD assets in an emergency response.

During Hurricane Mitch, UN relief efforts were generally not visible to DoD personnel at SOUTHCOM headquarters or in the AO. This lack of visibility was due in part to fragmented management by the UN, and in part to decisions by the USG and the Joint Staff not to coordinate their relief operations through the UN system. In addition, minimal interface between UN and DoD personnel resulted from limited understanding by U.S. military commanders of the UN's role or capacities in emergency response.

RECOMMENDATION CN-2-1: The Joint Staff and staffs of geographic combatant commands should increase the degree to which U.S. military and UN relief programs are coordinated prior to and during natural disasters. Specific steps for better coordination include: (1) the Joint Staff should inform the staffs of geographic combatant commands of the role of the UN Resident Representative, UN Humanitarian Coordinator, OCHA and other UN agencies during a disaster, especially the use of UN assets like the MCDA register; (2) during disaster relief operations, geographic combatant command planning staffs should ascertain the planned UN response, and determine whether UN assets might be substituted for U.S. military assets planned for deployment; (3)

Commander's guidance provided by regional CINCs during disaster relief operations should stress the value of collaborating with UN agencies present in the AOR; and (4) training programs and exercises should include UN personnel as participants and should include familiarization with UN disaster relief capabilities as part of the curriculum.

RECOMMENDATION CN-2-2: JTF commanders, when deploying LNOs or establishing Civil-Military Operations Centers (CMOCs) or other coordination mechanisms, should ensure that their forces establish liaison with UN agencies present at the disaster scene. CMOCs should be coordinated with UN On-site Operations Coordination Centers (OSOCCs) or other cooperative mechanisms, and JTF personnel should seek to participate in coordination mechanisms established by the UN.

FINDING CN-3: The management of regional catastrophes, like Hurricane Mitch, is inherently complex. Regional disaster assistance organizations can play a variety of roles in disaster preparedness and mitigation, though none is capable of fully managing a high magnitude crisis. DoD liaison with and support for regional organizations, prior to a disaster, can pay dividends.

DISCUSSION: When a single large-scale disaster like Hurricane Mitch strikes multiple countries in a region, mechanisms for command and control, coordination and communication – which are often organized around specific countries – can become over-burdened. During region-wide disasters, USG interagency processes, which rely in large measure on U.S. Embassies and nation-specific disaster declarations, also require refocusing on regional issues. Under these circumstances, regional organizations with disaster-related mandates are frequently posited as useful intermediaries for coordinating the international response. In each geographic combatant commander's AOR, at least one regional organization claims the mantle of disaster manager.

In the fall of 1998, when Hurricanes Georges and Mitch struck the Western Hemisphere, at least three regional Inter-Governmental Organization (IGOs) – the Pan-American Health Organization (PAHO), the Caribbean Disaster Emergency Response Agency (CDERA), and the Center for the Prevention of National Disasters in Central America (CEPREDENAC) – were active in the HA/DR field. The capabilities of these institutions varied widely, however, with CEPREDENAC focused on disaster mitigation, for example, and PAHO concentrating primarily on health care. Although each of the regional organizations in the Caribbean and Central America had something to contribute to hurricane response, none had sufficient visibility or C4 capability to serve as a primary interface for DoD disaster relief. When dealing with regional organizations and their often limited staffing, coordination prior to the onset of a disaster is essential. SOUTHCOM's pioneering efforts with CDERA and PAHO, which led in the latter case to the exchange of liaison officers, serve as models of mutually beneficial interaction between DoD commands and regional organizations to improve HA/DR operations.

RECOMMENDATION CN-3-1: Geographic combatant command planning staffs should survey disaster-related regional organizations headquartered in their respective AORs, to determine the roles and capabilities of these organizations during disaster response missions.

RECOMMENDATION CN-3-2: Relevant regional organizations with disaster management mandates should be invited to participate in CJCS, geographic combatant

command, and other DoD training and exercises related to HA/DR operations. The goal of participation by regional organizations should be to facilitate link-up between DoD forces and these institutions for disaster response synergy.

RECOMMENDATION CN-3-3: Certain regional organizations, like the CDERA partnership with the CARICOM Regional Security System (RSS) in the Eastern Caribbean, have specific mandates and mechanisms to provide relief supplies and disaster first responders on-scene following a disaster. Geographic combatant commands should examine ways to strengthen the capabilities and facilitate the employment of such organizations, whose prompt responses may obviate the need for massive international assistance or, specifically, for a DoD relief effort.

FINDING CN-4: Contact between U.S. military forces and non-governmental organizations (NGOs) operating in the Hurricane Mitch AO ranged from close cooperation to absence of contact, but was mainly characterized by sporadic, non-systematic interaction. Many DoD personnel providing assistance in Central America evinced limited knowledge of the nature and scope of NGO operations.

DISCUSSION: Generally, two categories of NGOs operate at foreign disaster sites: (1) those NGOs, international or indigenous, operating in the country before the disaster struck, which expand their efforts to include relief work; and, (2) those disaster response organizations from abroad that arrive after a crisis occurs. As is widely known among U.S. military commanders, NGOs – especially those in the first category – can be knowledgeable partners and valuable sources of information on local conditions and relief needs following a crisis. As is also widely known, NGO characteristics like independence and fluid C2 arrangements make military-NGO partnerships challenging to many commanders.

Following Mitch, the AO was fortunate to have a number of NGOs in the first category, including substantial organizations such as CARE and Catholic Relief Services with management capacities and long-term experience in the affected countries. However, due to a number of factors (e.g., chaos surrounding a disaster of Mitch's size; lack of investment in coordination mechanisms; limited information on where NGOs were operating; ambivalent relations between some NGOs – especially those taking controversial positions on topics like human rights – and host governments; general unfamiliarity among deploying units with NGO operations; and others), the potential for an early and sustained partnership between deployed U.S. military units and NGOs was not fully realized. Other organizations within the USG that regularly deal with NGOs, like OFDA and the local USAID office at American Embassies, can be excellent entry points with the NGO community in the AO.

RECOMMENDATION CN-4-1: The Joint Staff, joint commands, and DoD training institutions should continue to enhance the efforts made in recent years to engage NGOs more substantially in training, exercises and pre-planning for disaster response operations.

RECOMMENDATION CN-4-2: The Office of Peacekeeping and Humanitarian Assistance should initiate a study of the scope and intensity of NGO participation in DoD training and exercises for emergency response preparedness. This study should

recommend ways to strengthen coordination between U.S. military commands and NGOs.

RECOMMENDATION CN-4-3: Staffs at geographic combatant commands should review their systems for identifying and locating NGOs working in disaster-prone regions, contact lists, and systems for determining NGO capabilities. Commanders and units deploying to foreign disasters should be provided a full list of major NGOs operating in the AOR, their capabilities and contact points.

RECOMMENDATION CN-4-4: JTF commanders assigned disaster response missions should place a high priority on establishing early contact with disaster relief NGOs in the AOR, and should place a high priority on establishing mechanisms, such as a CMOC, for ongoing information exchange. Commanders should consider using OFDA or other USAID contact points as interfaces with NGOs.

FINDING CN-5: The Hurricane Mitch response reflected a substantial breakdown in the application of DoD doctrine on Civil-Military Operations Centers (CMOCs). Formal structures for coordination between U.S. military forces and non-USG civilian relief agencies did not, by and large, achieve significant synergy.

DISCUSSION: Joint doctrine makes clear that disaster response efforts require formal coordination mechanisms on-site to harmonize the plethora of relief agencies that arrive at the crisis scene. CMOCs provide a structure for exchanging information, prioritizing military tasks, and initiating requests for assistance between civilian agencies and the deployed JTF. Although a number of structures called CMOCs were eventually established in the SOUTHCOM AOR in the weeks following Mitch, these structures were not perceived as central to the missions either of U.S. military forces or civilian relief agencies. CMOCs created in Central America were organized late, generally staffed by Reserve Component personnel on short rotations, often located in sites virtually inaccessible to NGOs and, generally, peripheral to JTF mission planning and execution. Commanders arrived in theater with limited understanding of the CMOC concept and little guidance about the importance of establishing one. Units that were on the ground in the AO early, like DJTFACs, were not configured to establish a CMOC.

Based on analysis of Hurricanes Georges and Mitch operations, and a review of current joint publications addressing CMOC, JTF commanders assigned HA/DR missions in the future would benefit if CMOC doctrine were clarified in several key areas:

- Under what conditions should CMOCs be established when host nation governmental structures, although battered, are still functioning (as opposed to a locale like Somalia, where government authority had evaporated in the aftermath of crisis)? If the governments of affected nations have established crisis action centers (CAC) to coordinate relief activities, what is the relationship of the CMOC to this CAC?
- When representatives of the international civilian relief community (the UN, IGOs, IOs, or NGOs) create a humanitarian operations center (HOC) for coordination purposes among themselves, what is the appropriate relationship between the HOC and CMOC? Specifically, is the CMOC embedded, a structure adjunct to the HOC, or does it serve stand-alone coordination functions?
- What is the role of the CMOC, and how should it be structured, when the JTF or other responding U.S. military command is remote from the site of civilian relief operations or coordination? Joint Task Force Full Provider was afloat in the Caribbean while NGOs and others were coordinating on the ground in the Dominican Republic; JTF Bravo was headquartered at Soto Cano while NGOs

were meeting in Tegucigalpa. What role does a CMOC play under these conditions?

RECOMMENDATION CN-5-1: The Joint Staff should ensure that doctrine (including the Draft Joint Pub 3-07.6) is clear that CMOCs are applicable in situations where the host government is still functioning. The Joint Staff should, in addition, develop guidance for creating and maintaining a CMOC in situations where the JTF tasked with disaster response missions is located onboard ship, or otherwise at some distance from the locus of relief efforts and interagency coordination. The Joint Staff should clarify the relationship between CMOC and HOC or other humanitarian coordination centers located in the affected area.

RECOMMENDATION CN-5-2: The Office of Peacekeeping and Humanitarian Assistance should review the degree to which joint doctrine on CMOCs is being conveyed at joint and Service schools, and ensure that the CMOC concept is being exercised in the DoD exercise program.

RECOMMENDATION CN-5-3: Geographic combatant commands should ensure, through FUNCPLANs for HA/DR operations, commander's guidance, and deployment orders, that CJTFs deploying on foreign disaster response missions understand the centrality of CMOCs to efficient crisis management and establish a CMOC immediately upon commencing operations.

RECOMMENDATION CN-5-4: DJTFACs deploying to assist JTFs on foreign disaster response operations that arrive prior to the JTF Headquarters should include at least one CA officer fully familiar with CMOC operations, and should be tasked with planning for the establishment of a CMOC upon arrival of the JTF commander.

FINDING CN-6: After Hurricanes Georges and Mitch, as in the aftermath of most natural disasters, private sector capabilities were available to supplement the relief effort.

DISCUSSION: As occurs following most major rapid-onset natural disasters, private sector companies and organizations provided significant levels of assistance – both for hire and gratis – to populations affected by Hurricane Georges in the Caribbean and Hurricane Mitch in Central America. In relief and recovery efforts, local or regional companies may have assets, like construction or transport equipment, that can be brought to bear in the relief effort more quickly or more cost-effectively than can U.S. military assets being deployed from abroad. The use of such companies under contract to DoD requires careful consideration of the foreign policy impact of their use, as well as the impact on the local economy. That is, the U.S. Embassy should be consulted on the desirability of engaging local contractors, and U.S. military forces should ensure they are not engaged in bidding competition with local government or relief agencies for available private sector assets. [See also, Finding CH-2]. At a minimum, large multinational companies and local private companies of substantial size operating in the affected area should be surveyed to determine their potential capabilities and should be engaged in the relief effort.

RECOMMENDATION CN-6-1: Geographic combatant commands and JTF commanders should both specify, in commander's guidance for disaster relief operations, that deploying forces should engage private sector resources, when applicable and cost-effective, in the disaster relief effort.

RECOMMENDATION CN-6-2: JTF commanders should ensure that relevant host nation private sector organizations are invited to participate in CMOCs or other disaster relief coordination mechanisms.

DOCTRINE AND PROCEDURES (DP)

FINDING DP-1: DoD commanders and staff adopted a wide variety of approaches to hurricane disaster response operations in fall 1998, reflecting in part the absence of a consolidated doctrinal document on foreign HA/DR operations.

DISCUSSION: Commanders and staff that engaged in Hurricane Georges or Hurricane Mitch operations often held differing views on appropriate tactics, techniques or procedures for HA/DR operations, either in terms of internal DoD processes or in terms of relations with other disaster responders. This fact is perhaps not surprising since the state of the art in U.S. military response to humanitarian disasters continues to evolve rapidly, as DoD is tasked with a large number of diverse HA/DR missions, and as commanders develop expertise and techniques in this specialty.

Current doctrine on foreign disaster response operations is scattered among a number of joint publications, including those on joint operations, civil-military operations, and military operations other than war, as well as in Service publications. Draft Joint Publication 3-07.6, *Joint Tactics, Techniques, and Procedures for Foreign Humanitarian Assistance*, currently in the Preliminary Coordination stage, provides a potentially useful consolidation of much current thinking in the application of military resources to humanitarian operations. Many of the Findings developed for this study suggest clarifications or additions to Draft Joint Publication 3-07.6.

RECOMMENDATION DP-1-1: The Joint Staff should complete the early publication of Joint Publication 3-07.6, incorporating recommendations contained in this study.

RECOMMENDATION DP-1-2: The Office of Peacekeeping and Humanitarian Assistance, in conjunction with the Joint Staff and DoD schools, should develop a plan for incorporating the tactics, techniques and procedures contained in Joint Publication 3-07.6, when issued, in the curriculum of Joint and Service schools.

FINDING DP-2: Better use can be made of disaster relief “measures of effectiveness” (MOEs) – especially quantifiable MOEs – for mission and redeployment planning.

DISCUSSION: MOEs, in general, are tools to determine the degree to which forces are achieving mission objectives. As stated in draft Joint Pub 3-07.6 (*Joint Tactics, Techniques, and Procedures for Foreign Humanitarian Assistance*), MOEs can establish “quantitative or qualitative standards as a means to evaluate operations and guide decision making” (Paragraph IV-10). Although there is no “right way” or “wrong way” to utilize MOEs, and although the use of MOEs in disaster operations is at the discretion of commanders, it is clear that quantifiable MOEs were not widely used during the Hurricane Mitch operation.

CINCSO’s operations order usefully defined transition factors for the return of the AOR from JTF Aguila to JTF Bravo, including such criteria as “conditions set for critical life support requirements (food/water distribution, sanitation, emergency medical, etc.) to be contracted or assumed by host nation or civilian agencies.” Such transition factors helped shape the operational end state and, consequently, the end date for DoD operations. Ideally, MOEs established for disaster relief operations should focus on the affected population and be expressed in terms of “output” measures, such as the drop in mortality rates, increase in water available per capita, or decrease in the number of persons residing in temporary shelter, as examples. Quantifiable MOEs are also useful in establishing an “end state” for disaster relief operations. Although commanders must be certain not to set MOEs so high as to be unattainable, the achievement of measurable indicators can provide a strong argument that the military role in a disaster relief operation has ended. Standard MOEs for food, water, health, shelter, care of displaced persons, and similar categories of assistance are available through publications such as OFDA’s *Field Operations Guide* (Ref. 26) and through consultations with civilian organizations such as PAHO. Discussions with host nation ministries with technical expertise, such as ministries of health, public welfare, and public works, are another source of disaster response MOEs, especially standards for when conditions of normalcy have returned.

RECOMMENDATION DP-2-1: The Joint Staff should develop and widely disseminate guidance to J3, J4, and J5 staffs of geographic combatant commands on the use of MOEs during disaster relief operations. This guidance should reference Joint Pub

3-07.6 and recommend that quantifiable MOEs be included in key documents defining the mission of JTFs established by the geographic combatant commands.

FINDING DP-3: USG policy must be clarified on whether DoD assistance can be used to evacuate threatened host nation populations prior to the occurrence of a foreign natural disaster.

DISCUSSION: As Hurricane Mitch approached the Caribbean coast of Central America, both the government of Belize and the government of Honduras conducted evacuation operations to remove populations from low-lying areas in the path of the storm. These operations were credited with saving many lives. In general, when early warning indicators provide alert of an impending natural disaster, evacuation of threatened populations to safer areas may be the most effective strategy, reducing the requirement for a subsequent major relief effort to assist disaster victims.

Given constantly improving warning systems for natural disasters and the U.S. military's transport capacity, USG planners should develop policy for how the USG would respond to requests by a foreign government for assistance with evacuation or relocation of large numbers of host nation citizens as a preparedness measure.²⁵ Current USG policy is unclear on whether pre-disaster evacuation operations for host nation populations overseas are authorized, how requests for such assistance would be processed, or how they would be funded. The Foreign Assistance Act of 1961, which authorizes the President to provide foreign disaster relief and rehabilitation assistance, includes "assistance relating to disaster preparedness and contingency planning for natural disasters abroad" as one of the categories of authorized assistance. On the other hand, current OFDA process requires the chief of mission at the U.S. Embassy in the affected nation to issue a disaster declaration prior to the expenditure of USG funds, and disaster preparedness has not generally been defined by OFDA to include evacuation operations.

RECOMMENDATION DP-3-1: The Office of Peacekeeping and Humanitarian Assistance should initiate discussions with the Department of State, USAID/OFDA, and the Joint Staff on whether, and under what circumstances, evacuations prior to the occurrence of a foreign natural disaster would be authorized. These discussions should specify, if it is determined that evacuation operations are allowable under U.S. law, the procedures for initiating evacuations and the plan for reimbursement.

²⁵ This Finding examines mass relocation or evacuation of host nation nationals, as opposed to evacuation of U.S. citizens or third-country nationals.

ENGINEERING SUPPORT (ES)

FINDING ES-1: U.S. military engineer units accomplished effectively the HA/DR tasks they were assigned during the Hurricane Mitch response. In order to complete their assigned missions, commanders were required to (1) coordinate project selection with relevant host nation and USG officials, and (2) ensure the timely arrival of critical equipment at the project site.

DISCUSSION: Employment of the extensive engineering capabilities available in the U.S. military made a significant contribution to the effectiveness of the USG disaster response in Central America. Although U.S. military engineering capabilities are designed to meet the requirements of major combat contingencies, they proved generally suitable for use in the Hurricane Mitch mission, as well.

Engineering operations in the aftermath of natural disasters are, by their nature, relatively costly and highly visible. Given the importance of restoring damaged infrastructure in the wake of a disaster, and the competition within an affected nation for limited resources, the commitment of U.S. engineering units for the time required to complete a road repair, a well digging, a structural rehabilitation, or a water purification project is a substantial event, with political ramifications in the host nation. For this reason, commanders of U.S. military engineering units were required to invest considerable time in coordinating their tasks with host nation and USG officials.

Upon arrival in the affected region, U.S. engineering units often received project lists from host nation government officials that far exceeded U.S. capabilities within the expected time frame of the deployment. Each of these units engaged in a vigorous assessment of the proposed projects and in detailed discussion with responsible national officials before proffering a list of projects U.S. forces could reasonably expect to complete during their deployment. U.S. Embassy, USAID, and OFDA officials also became involved in this selection process, in order to ensure that projects undertaken were consistent with longer-term USG foreign policy and foreign aid goals, including disaster relief, rehabilitation and development objectives. Creating a final list of U.S. military engineering projects through this process required considerable investment of time and energy by unit commanders and staffs. Similar investments in effort can be anticipated in the development of engineering projects in future foreign natural disasters with extensive infrastructure damage. At the end of the consultation process, however, U.S. engineering units culled from the requests for assistance a list of projects that could be completed on time, with available equipment and skills; that could be accessed by

heavy equipment overland from ports of debarkation; that avoided overlap with engineering efforts of the host nation or other responders; and that were acceptable to local citizens and the media. To their credit, U.S. military units completed the great majority of the engineering projects selected through this process.

A second issue faced by U.S. military engineering units and their commanders was how to marry unit personnel and equipment, in a timely fashion, at sometimes isolated project sites. During the Hurricane Mitch response, competition for air transport – both from within the Hurricane Mitch disaster operation and from competing contingencies in other regions – resulted in units arriving via a combination of air and sea transport. Heavy engineering and construction equipment was often transported by sea; in some cases, engineer personnel waited for several weeks for their equipment to arrive. Given the transit time from CONUS to the affected region by ship, equipment requested by some units was not utilized after it arrived, due to changing missions and requirements. Moreover, once heavy equipment arrived at host nation seaports, commanders faced serious challenges deploying the equipment over inadequate, often damaged road networks to the project site.

In the aftermath of any rapid-onset natural disasters with major infrastructure damage like Hurricane Mitch, DoD commanders deploying engineering assets will likely face a balancing act like that encountered by SOUTHCOM and JTF commanders in Central America in 1998. Inherent contradictions in HA/DR operations between the time needed to plan engineering projects and deploy equipment, on the one hand, and the desire to move quickly to relieve human suffering, on the other, require focused attention in order to accomplish engineering missions effectively. In HA/DR operations like Mitch, complicating factors, such as competing U.S. military missions in other regions, limited air transport, intense media interest, limited host nation road capacity, and deployment of task-configured detachments from engineering units required careful planning and implementation.

RECOMMENDATION ES-1-1: JTF commanders and staff, and assigned engineering units, should anticipate, plan for, and allocate resources for a process of negotiation with host nation officials and USG representatives in the AO to establish a priority list for engineering projects. Commanders and staff should carefully assess the time and equipment requirements of projects requested by host governments to ensure projects will be completed during the anticipated period of deployment, taking into account time for redeployment preparations.

RECOMMENDATION ES-1-2: Given the high probability that some level of DoD engineering assets will be requested by affected nations in the aftermath of major natural disasters, J4 staffs at unified combatant commands should request and deploy to the AO, very early in the relief operation, either engineering personnel from subordinate commands or liaison officers from other deployable engineering units. These engineer personnel should be tasked with validating available assessments of construction requirements and beginning the process of winnowing projects to be completed by U.S. military units. Information garnered from these advance elements should be factored into the determination of which engineering units and equipment will be requested for deployment by the geographic combatant command. When possible, an engineering officer should accompany the DJTFAC to initiate this process.

RECOMMENDATION ES-1-3: Given the likelihood that engineering assets will be available following a major disaster from various sources (host nation government civilian and military sources, other foreign donors, private companies), and given the cost and time commitment to deploy major units and heavy equipment from CONUS to disaster sites, planning staffs at unified combatant commands should request that MILGPs (or in their absence the DATTs) complete a rapid assessment of available engineering and construction assets in the affected country in the aftermath of national disasters. Providing U.S. military engineer planning and management capabilities to work with engineering assets already located in these AO may, in some cases, be preferable to shipping DoD engineering units and equipment to the disaster site.

FINDING ES-2: Following Hurricane Georges and Hurricane Mitch, officials of affected territories or nations requested that U.S. military units provide and install substantial numbers of replacement bridges – requests that far exceeded DoD on-hand capacity. In some instances, officials made specific requests for Bailey Bridges, based on very limited knowledge of U.S. military assets. Since such requests are likely in future disasters, active management both of limited bridge assets and information on those assets is required.

DISCUSSION: As described earlier in this report, the two major hurricanes in fall 1998 destroyed or rendered inoperable numerous bridges throughout the Caribbean and Central America – more than 30 in Honduras and Nicaragua alone. Especially in the latter region, bridge outages crippled overland travel and severely hampered relief operations, as well as stranding thousands of victims. Predictably, affected nations, U.S. Embassies, and other emergency responders issued an emergency plea for replacement bridges, sometimes based only on the knowledge that a particular river crossing was reported as inoperable. In many of these instances, based on a lay knowledge of replacement bridge technology, specific requests were generated for “Bailey Bridges” – implying a rapidly deployable, quickly assembled substitute crossing. Since, as described earlier in this study, USG disaster needs assessment procedures require reform, many of these requests for “Bailey Bridges” reached the attention of high level officials in the USG, and subsequent pressure was placed on DoD to make available replacement bridges in the affected nations.

The high intensity demand for replacement bridges generated several problems for U.S. military planners:

- First, requests often denoted unidentifiable place names, and provided little information on where bridge replacement projects stood on host nation relief priority lists.
- Second, as it turned out, many of the bridges were not structurally affected, but the approaches were destroyed. From an engineering point of view, what was really needed was assistance in constructing low level bypasses and fords in the river beds or making more durable those bypasses already built by the host nation.
- Third, Bailey Bridges themselves are no longer maintained by the U.S. Army in “ready for issue” condition and Army engineers no longer train on Bailey Bridges. Although some of these items are still stored in Defense Logistics Agency (DLA) depots as parts, they require costly inspection and assembly.

Although bridges were urgently needed, the preferred method of deployment was by sea, about a two-week delay.

- Fourth, the primary bridging assets currently preferred by the U.S. military – ribbon (floating) bridges and the Medium Girder Bridge (MGB) – are a very limited asset (with only two active MGB companies in existence, each with about 130 meters of bridge capacity). For MGB units, the bridges comprise unit equipment and can only be put in place temporarily; once the bridges are utilized for HA/DR operations, the units are not operationally ready for their primary mission.

As it eventually worked out, for the Georges response a small number of Bailey Bridges were deployed to Puerto Rico aboard USNS ALGOL. For Mitch, only seven Bailey Bridges were required. Of these, the U.S. bought two (with World Bank funds) and assembled five.

Since the destruction of bridges during natural disasters is common, highly visible events with serious short-term and long-term consequences, U.S. military units are likely to receive requests for bridging assistance in the future. Management of limited DoD assets and accurate information about asset availability are important to avoiding unrealistic expectations or inappropriate planning by host nations and emergency responders.

RECOMMENDATION ES-2-1: The Joint Staff J4, in conjunction with the Army Corps of Engineers, should develop an assessment format for determining the level and type of damage to existing bridge structures of the type likely to be caused by natural disasters (such as floods, earthquakes, and tidal surges). The assessment format should include guidance on determining what kind of temporary repairs (e.g., fords, bridge approach repairs, shoring) may return the crossing to operation. This assessment format should be widely disseminated to MILGP and DJTFAC personnel of geographic combatant commands, OFDA and other civilian assessment personnel, host nation disaster response agencies, and other likely emergency responders who might generate requests for bridge replacement following natural disasters.

RECOMMENDATION ES-2-2: The Office of Peacekeeping and Humanitarian Assistance, in conjunction with the Joint Staff J4 and the Army Corps of Engineers, should develop two information products: (1) a compilation of U.S. military bridging capacity; and (2) a list of commercial sources of expertise and equipment for temporary bridge construction following natural disasters. These information products should be widely disseminated to staffs of unified combatant commands, U.S. Embassies, OFDA,

and other USG emergency responders, as well as emergency response agencies in disaster-prone nations, to provide information on alternative sources of assistance for bridge repair or replacement.

FINANCIAL OPERATIONS (FO)

FINDING FO-1: DoD had not previously used the combination of funding authorities employed to fund Hurricane Mitch operations, and that funding package required trade-offs in DoD programs. Future disaster relief operations would benefit from improved funding mechanisms.

DISCUSSION: The financial support for Hurricane Mitch operations was described by a DoD official as a “complicated financial endeavor requiring monitoring and controlling various funding sources and providing funds to a variety of activities and services.” As the extent of the storm’s damage unfolded, it was unclear which federal funding sources would be tapped to pay for the relief effort, and whether participating agencies would be reimbursed for their contributions to the relief effort.

Ultimately, DoD used the following funding authorities during Hurricane Mitch operations:

- Immediate Foreign Disaster Assistance, sanctioned in 10 USC 404 and Executive Order 12966, July 1995: This authorization, allowing the expenditure of Operation & Maintenance Account (O&M) funds, is limited solely to activities to prevent loss of life.
- Overseas Humanitarian, Disaster and Civic Assistance (OHDACA), found in 10 USC 401, 404, 2547, and 2551: This authorization allows DoD to spend O&M funds on transportation and the following training activities: medical, dental, and veterinary care provided in rural areas of a country; construction of rudimentary surface transportation systems; well drilling and construction of basic sanitation facilities; rudimentary construction and repair of public facilities; and, detection and clearance of landmines, including activities relating to the furnishing of education, training, and technical assistance with respect to the detection and clearance of landmines.
- CINC Initiative Funding (CIF), authorized in 10 USC 166a: This O&M money is meant for CINCs to use for training activities outlined in 10 USC 401, as well as force protection, readiness activities, threat reduction and unforeseen contingencies.
- Emergency Drawdown Authority, sanctioned in the Foreign Assistance Act (FAA) § 506(a)(2) or 22 U.S.C. § 2318(a)(2): If an “unforeseen emergency” should arise overseas, the Foreign Assistance Act of 1961 (P.L. 87-195), as amended, empowers the President to “draw down” articles and services from existing U.S. government holdings, budgets or arsenals without awaiting congressional approval. Mitch relief efforts used subsection 506(a)(2), which authorizes yearly drawdown of up to \$150 million from any U.S. government

agency. The law specifies, however, that no more than \$75 million per year may come from DoD inventories.

- International Disaster Assistance (IDA) Account, found in the Foreign Assistance Act of 1961, Sections 491-494, as amended: Empowers the President to spend funds related to all aspects of USG international disaster assistance including relief, rehabilitation and reconstruction assistance to victims of natural and man-made disasters. Congress allocates IDA funds to the USAID Administrator, who in turn delegates broad management responsibility to OFDA for disaster relief programs. During Hurricane Mitch operations, OFDA reimbursed DoD \$5 million from the IDA account.

During interviews conducted for this study, several representatives of USG civilian agencies questioned DoD's decision to wait for funding authorization before immediately engaging in substantial relief operations in the aftermath of Hurricane Mitch. However, Congress has given fiscal authority to the President to respond to foreign disasters via the IDA; the President has delegated this authority to the USAID Administrator, not to DoD. Congress has authorized some augmentation to the IDA account via the DoD authorizations described above. But those authorizations, by and large, are not specifically intended to provide disaster relief. Rather, the DoD funding authorizations employed in the Mitch operations were primarily focused on training of forces, although the authorizations did allow for secondary humanitarian benefits. DoD directives, procedures, and guidelines generally speak to DoD being reimbursed by DoS and USAID, since DoD has traditionally viewed its role in foreign disaster assistance as providing support to civilian authorities. In short, despite some criticism among interagency colleagues that DoD had the authority to provide large-scale assistance more rapidly after Hurricane Mitch, DoD was justified in waiting for specific funding authorization, based upon U.S. law and existing DoD policy.

At the level of the geographic combatant command in whose AOR the disaster occurred, the funding authorizations that were employed clearly limited DoD's disaster relief activities after Hurricane Mitch. CINCSO had limited authority under 10 USC 404 to save lives. SOUTHCOM could not task personnel or equipment from supporting commands or request personnel from other unified combatant commands to conduct further disaster operations until specific authorities and accompanying funds were identified. The USG civilian agencies or departments participating in the Mitch response by and large did not understand the constraints DoD faced. DoD personnel went to the interagency meetings expecting to receive funding from the civilian agencies, while representatives of many of these civilian agencies viewed DoD as a major resource

provider in the early stages of the relief effort. These different perspectives caused some conflict in the interagency setting.

In order to accomplish the assigned mission, DoD comptrollers and legal advisors “scoured the books” for appropriate and applicable funding authorities. A major issue encountered was that the authorities they found required the reallocation of funds from pre-planned programs and priorities. For example, OHDACA and CIF reprogramming required that important demining activities around the world be stopped or, in some cases, re-scheduled, with attendant humanitarian, diplomatic, and political repercussions, within the United States and abroad.

Another major issue was the amount of funds available for reprogramming. DoD officials discovered as they reprogrammed funds for the Mitch response that their strategy depended upon the time of the year that disaster response funds were required. That is to say, a substantial reprogramming on the order of Hurricane Mitch was only possible because there were substantial funds in the relevant accounts. OHDACA, CIF and drawdown authorities used to generate DoD disaster response funding for Hurricane Mitch might not be available at the same level for the next major disaster, should it occur at the end of a fiscal year.²⁶

Additionally, because the Hurricane Mitch operation was the first time that a 22 U.S.C. § 2318(a)(1) drawdown was used for providing disaster relief after a natural disaster, DoD officials encountered a third major funding issue: the drawdown authority could not meet all categories of relief assistance required following a rapid-onset natural disaster. Typically, drawdown authorities have been used in conflictive situations like Bosnia, Liberia, and Rwanda, which required the application of DoD combat or combat support capabilities within a humanitarian context. However, during Hurricane Mitch, the assistance required by disaster victims often consisted of purely relief items such as food, medicines, clothing, and shelter, and the drawdown authority did not permit provision of all these items. The drawdown authority only allowed the spending of existing O&M funds and the use of existing stocks and supplies. It did not authorize the purchase of additional supplies or services. It was only the combination of the funding

²⁶ Even though DoD expenditures were replenished, the U.S. General Accounting Office (GAO) noted that a substantial number of humanitarian operations scheduled for FY 1999, including demining operations, could not be rescheduled after being terminated in favor of Hurricane Mitch efforts (Ref. 50).

authorities cited above that offered DoD the capability to carry out the full range of Hurricane Mitch relief operations actually accomplished.

Notably, the combination of funding authorities utilized to support the Hurricane Mitch mission – particularly the drawdown authority and CIF account – also potentially affected readiness. Continued use of these authorities as primary mechanisms for funding disaster relief activities increases the likelihood that, in some circumstances, commanders will have to strip funds from core military operations. Fortunately, after the Hurricane Mitch operations, Congress authorized and appropriated supplemental funds reimbursing DoD and the Services for their Mitch-related expenses – a fortuitous outcome that is not guaranteed following future foreign natural disaster operations.

There were other USG funding authorizations that were available during Mitch, which were not used. They included:

- DoS's Emergency Refugee and Migration Assistance (ERMA) fund, and
- DoD's Defense Emergency Response Fund (DERF),²⁷ which was not used during Mitch operations.

The DERF is a reimbursable or revolving fund, which was meant to consolidate DoD's expense reporting for disasters. In the past, the DERF has been reimbursed from FEMA funds following domestic disasters, but this has not happened in several years. Originally, Congress appropriated \$100 million for the DERF to finance the costs of DoD efforts to relieve the effects of natural and manmade disasters, prior to the receipt of a reimbursable request for assistance from federal, state or local authorities, and to allow for reimbursement of costs incurred while providing supplies or services in response to natural or manmade disasters. Although the DERF is viewed as a part of the domestic disaster response apparatus by some observers, there appear to be no legal or policy limitations that would prevent the DERF being employed during foreign disasters.

In contrast to normal practice in domestic disaster relief operations, DoD did not know whether and/or when its relief efforts during the Hurricane Mitch disaster would be reimbursed. The reimbursement process depended both on USAID policy decisions on the allocation of IDA funds and on Congressional supplemental appropriations decisions. In contrast, federal agency support functions undertaken pursuant to the *Federal Response Plan* in support of a domestic disaster are generally reimbursed by FEMA through a detailed, pre-established agreement. Interagency uncertainty during the early

²⁷ See DoD Financial Management Regulation Volume 12, Chapter 6, for a description of the DERF.

stages of the Mitch response over who would cover the costs of relief efforts may have contributed to delays in the USG response, and certainly bred a degree of confusion in the interagency planning process.

RECOMMENDATION FO-1-1: The Secretary of Defense should recommend that the National Security Advisor convene an interagency working group to develop a financial contingency plan for foreign, rapid-onset, natural disasters. This plan should include estimated costs under varying assumptions, a comprehensive assessment of agency funding authorities and financial limitations, the system for requesting funding and for providing assets, reporting formats, and reimbursement procedures among agencies. In the longer term, USG departments and agencies should work toward a unified, consistent approach to the funding of foreign natural disasters based on the principle that the committing authority provides a fund cite at the time that DoD or other USG agencies are tasked with a disaster response mission.

RECOMMENDATION FO-1-2: The interagency working group established pursuant to Recommendation FO-1 should establish a notional funding sequence to “clear the deck” for rapid USG response during the first days of a foreign disaster relief effort. For the first week of the USG relief effort, all federal agencies responding to the crisis should draw upon the most flexible disaster funding mechanism available to the federal interagency system, the International Disaster Assistance Account, with applicable reimbursement provisions provided.

RECOMMENDATION FO-1-3: The Under Secretary of Defense for Policy, in conjunction with the Comptroller of the Department of Defense, should assess the costs and benefits of creating a “Foreign Disaster Relief” authority and account, similar to the existing DERF, in order to permit DoD to respond without detracting from readiness funds and to allow consolidated accounting of foreign disaster relief costs. A “Foreign Disaster Relief Account” (FDRA) might be structured to reimburse any command or Service, whether active or Reserve, when that entity responds to a foreign disaster. If created, a FDRA would also serve as the mechanism for seeking reimbursement from USAID’s IDA account, in those cases when reimbursement of DoD’s operations is appropriate.

RECOMMENDATION FO-1-4: Given the importance of assured financial resources to a rapid U.S. military response following rapid-onset disasters, the Joint Staff and Service staffs should ensure that appropriate financial plans are included in the

HA/DR FUNCPLANS of the unified combatant commands and Service commands, and that the capabilities for implementing these plans are present on the relevant staffs.

RECOMMENDATION FO-1-5: Unified combatant commands should include elements related to marshalling financial resources as a training priority of HA/DR exercises at the respective commands.

FORCE PROTECTION (FP)

FINDING FP-1: Landmines and unexploded ordnance (UXO) were a potential threat to relief operations after Hurricane Mitch. When rapid-onset natural disasters strike foreign nations that have experienced warfare in recent times, landmines and UXO surfaced by natural phenomena may pose a threat to local inhabitants, relief workers, and/or DoD personnel.

DISCUSSION: Three of four Central American nations that suffered severe damage from Hurricane Mitch were the scene of civil wars within fifteen years preceding the storm: Guatemala, El Salvador, and Nicaragua. Minefields and UXO from these conflicts were still present when the hurricane struck in 1998, although the locations of many minefields were known and their boundaries marked. Flooding and landslides associated with Mitch redistributed mines and ordnance, in some cases displacing entire minefields. Similar post-conflict arrays of mines and UXO exist in numerous disaster-prone regions of the world. The arrival of military or civilian disaster responders unfamiliar with the local terrain in these nations exacerbates the chance of incidents. In some cases, the locations of minefields are not so well known as in Central America prior to Mitch. In other instances, storms, earthquakes or other disasters may resurface or redistribute mines and UXO that have already been mapped.

RECOMMENDATION FP-1-1: Planning staffs of geographic combatant commands should assess the threat to U.S. forces of landmines and UXO when planning relief operations in areas that have experienced recent conflicts. Operational orders and commander's guidance should provide instructions on how to avoid or deal with this threat.

RECOMMENDATION FP-1-2: On-scene commanders responding to natural disasters in post-conflict nations should gather as much intelligence as possible on whether locations of mines and UXO are known, and whether these items have been relocated by the disaster. Local commanders should widely disseminate to military forces and civilian relief agencies available information on minefields and UXO, including local systems for marking minefields.

RECOMMENDATION FP-1-3: The Office of Peacekeeping and Humanitarian Assistance and geographic combatant commands should assign a high priority to OHDACA-funded de-mining operations in countries where natural disasters have redistributed landmines or UXO.

FINDING FP-2: Force protection was a priority during Hurricane Mitch Operations for military commanders tasked with HA/DR missions. Commanders' emphasis on protecting the force limited the impact of disaster relief operations.

DISCUSSION: Force protection is a responsibility that requires a constant balancing between preservation of U.S. military personnel and assets on the one hand, and accomplishing the mission, on the other. Striking the correct balance was a major consideration of military commanders during Hurricane Mitch operations.

The SOUTHCOM staff was focused on force protection issues from the initial stages of Hurricane Mitch. During the initial Course of Action briefing on 5 November 1998, SOUTHCOM staff cited force protection concerns as one of the disadvantages of a ground-based task force to manage relief operations. By 12 November, when CINCSO issued his OPORD for Central America disaster relief operations, the centrality of force protection was clear. The "Commander's Intent" stated CINCSO's intention to "**safely** employ . . . JTFs to expeditiously mitigate . . . human suffering." [Author's emphasis added] The Coordinating Instructions contained in that OPORD listed "force protection" as the highest "priority of effort" element.

SOUTHCOM's force protection plan focused on: performance of threat assessment, weapons qualifications, proper first aid training, an instructional class in overall force protection, rules of engagement training, and human rights training. SOUTHCOM delegated to the JTF commanders the authority to develop individual detailed plans. Once U.S. military personnel arrived in the AO they were given several briefings and orders on force protection in addition to the SOUTHCOM requirements. JTF Bravo maintained its normal force protection procedures and continued to train new personnel under their standard training programs. JTF Aguila leadership formed a Force Protection Working Group and issued a formal policy letter.

The JTF Aguila commander considered the area of operations very risky and, consequently, established very stringent security procedures, both related to the conduct of operations and to the activities of individual personnel, on- or off-duty. The operations procedures required a substantial level of effort before JTF Aguila personnel could conduct humanitarian assistance operations. Many of these personnel and others participating in the disaster relief effort maintained that the only real threat to U.S. military forces was from crime and/or health problems. Nonetheless, the daily force protection procedures that were employed were procedures designed for use in an

environment where terrorism and opposing forces provided the threat. These procedures were not reduced during the duration of the mission.

The process designed by JTF Aguila for forces leaving the base camps to conduct operations was described by one U.S. military interviewee as “extremely complex, time-consuming, and reduced the number of humanitarian missions dramatically.” For example, the process required visits by counter-intelligence units to prospective mission locations, preparation of a report on security issues, and approval for the individual missions from JTF Aguila headquarters. U.S. military personnel were required to have a minimum of two vehicles, and had to arrange for armed guards from the host nation military. This process had to be followed for every humanitarian mission. These force protection procedures also severely limited the actual period of time during which U.S. personnel could directly accomplish relief work, as they had to return to camp every night. This procedure was reported as a great frustration for disaster victims who walked long distances for medical treatment or other aid, only to discover U.S. military personnel had departed prior to the victims’ arrival at the announced mission site.

During Mitch operations the host nations, especially Nicaragua, voiced concerns about the U.S. military appearing as an occupying force. The host nations thought that this negative impression would be enhanced if U.S. military personnel drove armored vehicles and carried larger caliber weapons. This public perception issue had to be weighed against the U.S. military’s inherent right of self-defense.²⁸ As a resolution to the appearance issues, U.S. military forces attempted to maintain a low profile regarding the display of weapons during Mitch operations.

Contacts between JTF leaders and host nation governmental and non-governmental organizations contributed positively to the force protection program. The JTFs relied extensively upon host nation security forces for tactical security support, such as escorting convoys and perimeter security at base camps and humanitarian relief project sites. The JTF commander and his staff participated in high-level coordination meetings with chiefs of national police forces and Ministry of Defense personnel to discuss security issues and arrangements. The JTF commander and staff also visited regularly with local community leaders, religious leaders, and military commanders in their AO, to better understand local traditions and develop better situational awareness.

28 Under CJCS Standing Rules of Engagement (CJCS 3121.01), U.S. forces have the right to use force in defending themselves.

RECOMMENDATION FP-2-1: Recognizing the many constraints U.S. forces and disaster victims are likely to encounter in a post-disaster environment due to damaged infrastructure and transport, staffs at geographic combatant commands, when planning disaster relief operations in non-conflictive environments, should weigh the impact of detailed or stringent force protection requirements on the ability of U.S. forces actually to deliver relief supplies and services. Staffs planning such operations should provide maximum flexibility to JTF or other commanders within the AO to determine the optimal balance between force protection and accomplishing the HA/DR mission.

RECOMMENDATION FP-2-2: On-scene commanders tasked with HA/DR missions in non-conflictive environments should, in consultation with the U.S. Embassy and other reliable sources of information on local customs, allocate appropriate time for engagement with local leaders – civilian and military – to increase situational awareness and build good community relations as part of their force protection measures. [See also Finding CH-5].

RECOMMENDATION FP-2-3: The use of host government security forces, military and police, for perimeter protection, convoy escort, and other tactical security missions, contributed substantially to the protection of U.S. forces deployed to Central America. Staffs at geographic combatant commands or JTFs tasked with HA/DR missions should consider these methods in their plans for disaster relief operations.

RECOMMENDATION FP-2-4: JTF commanders should consider the Hurricane Mitch model of retention of personal weapons, sensitivities to local political concerns, and low-profile display of heavier weapons.

HUMANITARIAN OPERATIONS; NON-ENGINEERING, NON-MEDICAL (HO)

FINDING HO-1: DoD planners and commanders generally followed sound humanitarian principles while conducting relief missions following Hurricane Mitch, but operations could be strengthened by incorporating state-of-the-art humanitarian practices in U.S. military doctrine.

DISCUSSION: U.S. military commanders assigned the mission of supporting humanitarian operations overseas are generally expected to rely for guidance upon civilian relief officials, from within the USG and the host nation government, to define relief priorities and approaches. However, during Hurricane Mitch, the scope of the emergency, chaotic conditions, and limited guidance from civilian agencies often combined to place military commanders in the position of making decisions on the scope and content of relief operations their units would undertake. U.S. military commanders are likely to face similar decisions in future major disaster operations. Although it is unreasonable to expect that commanders, especially those from the combat arms, will invest disproportionate time in studying humanitarian principles and approaches, it is important that DoD personnel be aware of at least the essentials of sound relief doctrine.

In the past several years, NGOs and other civilian relief agencies have undertaken renewed efforts to standardize state-of-the-art relief doctrine. Perhaps the single most comprehensive initiative to promote sound relief doctrine is the Sphere Project, which seeks to develop “universal minimum standards in core areas of humanitarian assistance (Ref. 73).” The Sphere Project, which draws upon the work of leading civilian disaster responders, provides two basic products: (1) a “Humanitarian Charter” that defines the appropriate relationship between relief workers and those affected by the disaster; and (2) minimum standards in disaster response, which set basic standards in sectors like water and sanitation, health care, and nutritional assistance.

Incorporation of the work of the Sphere Project and other civilian doctrine in DoD doctrine for HA/DR operations, and training U.S. military personnel in these standards, would both enhance DoD disaster response operations and facilitate coordination with civilian relief agencies adhering to these standards.

RECOMMENDATION HO-1-1: Geographic combatant commands should include in FUNCPLANs and other guidance for staff tasked with the planning or command of disaster relief operations, a summary of essential “best practice” in relief operations, for dissemination to relevant joint commands.

RECOMMENDATION HO-1-2: The Joint Staff should ensure that important elements of the Sphere Project's publication *Humanitarian Charter and Minimum Standards in Disaster Response* are incorporated into draft Joint Publication 3-07.6, *Joint Tactics, Techniques, and Procedures for Foreign Humanitarian Assistance*.

RECOMMENDATION HO-1-3: The Office of Peacekeeping and Humanitarian Assistance and Joint Staff should ensure that essential "best practice" in relief operations is, at a minimum, introduced during curriculum segments on SSCs, MOOTW or Peace Operations at appropriate professional military schools, especially those training Civil Affairs and Special Operations Forces, whose missions may put them in close and frequent contact with disaster victims and relief agencies.

<p><u>FINDING HO-2:</u> Post-disaster DoD operations in disaster-prone countries can help mitigate future disasters and limit the requirement for major relief efforts.</p>
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DISCUSSION: All nations suffer natural calamities. The high death rates and damage to infrastructure that occur in poor nations – the “disasters” that often impel DoD and other international response – result from high-risk decisions by poor individuals and communities. Faced with limited economic and social choices, poor people in Central America settled in flood plains, near stream basins, or on steep hillsides. In order to eat, they stripped hillsides and other fragile terrain of natural vegetation, planted crops, and exacerbated the risk of mudslides. When rebuilding their homes, these same poor individuals relied on inexpensive building materials and techniques, which provided limited survivability during disasters. Overwhelmingly, it was residents of these poor communities who constituted the victims of Hurricane Mitch.

Although alleviating the widespread poverty that turns naturally occurring storms into natural disasters is beyond the scope of DoD activities, military commanders can ensure that their units’ humanitarian activities help prevent casualties and damage during future crises. The Humanitarian and Civic Assistance (HCA) programs sponsored by geographic combatant commands, while primarily targeted at training of U.S. forces, provide a useful venue for aiding poor communities in selected nations. If well designed, HCA programs can reduce the risk of damage by natural disasters by incorporating preparedness and mitigation elements into their design.

RECOMMENDATION HO-2-1: OASD SO/LIC, when issuing its annual guidelines for OHDACA funding, should ensure that projects – such as clinics and schools – proposed by geographic CINCs are located and designed consistent with national disaster avoidance or natural disaster survivability.

RECOMMENDATION HO-2-2: Commanders of units conducting HCA programs in developing countries should ensure that their units are aware of natural disaster risks facing the host nation, and that their units – relying upon the best local advice – include disaster prevention or mitigation steps in their projects, to the extent budget and time permit.

FINDING HO-3: Searching for and evacuating U.S. nationals was a high priority after Hurricanes Georges and Mitch, and DoD assets were requested for this purpose. This mission is likely to be assigned following future foreign disasters.

DISCUSSION: The primary USG responsibility for the safety of U.S. citizens residing or traveling abroad rests with the Department of State. When a foreign natural disaster places American citizens at risk and those citizens request USG assistance, DoS officials may request support from DoD. Following Hurricane Georges in the Caribbean, locating large numbers of U.S. Peace Corps volunteers working in remote areas of the Dominican Republic became a high priority for the U.S. government, as well as a focus for media attention and Congressional interest. Consequently, the U.S. Embassy in Santo Domingo requested DoD assets to assist with this mission. Ensuring the well-being of Peace Corps volunteers and numerous other American expatriates was a high priority issue in Nicaragua, as well, and in other Mitch-affected nations in Central America. While most U.S. citizens, fortunately, emerged unscathed from these two natural disasters, planning for their possible evacuation required SOUTHCOM resources and planning capacity. If a foreign natural disaster caused a high rate of injury or death among U.S. nationals living abroad, and assistance were requested from the DoS, public, political, and media pressure would likely require a large-scale DoD response.

RECOMMENDATION HO-3-1: During foreign disasters affecting countries with large numbers of U.S. nationals in residence, planning staffs at geographic combatant commands should anticipate requests for assistance from DoS officials, if those U.S. citizens are threatened. Staffs should prepare contingency plans, not only for evacuating U.S. citizens, but also to assist with locating, accounting for, and caring for U.S. citizens in the disaster area.

FINDING HO-4: Hurricane Mitch illustrated the complexity of food relief operations after rapid-onset natural disasters, and this factor requires close coordination by DoD with other interagency participants.

DISCUSSION: Disaster response planners naturally consider whether food relief is required following a natural disaster. But the appropriateness, timing, and type of food assistance are highly dependent on the specifics of the disaster and conditions in the affected country. Unlike long-term famine situations, food supplies in a country struck by a sudden natural disaster may be plentiful. Where a natural disaster has damaged the transportation infrastructure, distribution of food may be the real problem. In some cases, food storage facilities may have been damaged by flooding.

After Hurricane Mitch, short-term food supplies, provided by the U.S. government and other donors, were needed for isolated communities and groups forced to flee to shelters. In the longer term, seeds were required to help farmers replant gardens destroyed by the rain. In much of the territory of the affected countries, however, commercial crops (like bananas for export) were more heavily damaged than small food plots, and locally available food was adequate. Relief experts worried that too much international food relief might drive down prices paid to indigenous farmers, thereby disrupting local farm markets in Central America. Relief experts also reported that some of the food supplies delivered by humanitarian agencies consisted of culturally inappropriate foods, which were not accepted by disaster victims. These multiple aspects of food relief operations shaped the type of assistance requested from DoD.

RECOMMENDATION HO-4-1: Since the nature of food relief operations will shape the support requested from DoD after natural disasters, planners at geographic commands should coordinate with USG agencies monitoring food relief policy (OFDA, USDA, and USAID's Office of Food for Peace) to gain visibility into planned or ongoing food relief operations.

RECOMMENDATION HO-4-2: Delivery of Humanitarian Daily Rations (HDRs) by DoD forces following a natural disaster should be considered only after a clear picture of relief food need – based on sound assessment data – is established, and a determination is made of whether HDRs are appropriate for the circumstances.

HELICOPTER SUPPORT (HS)

FINDING HS-1: At the tactical level, the most valuable contribution of the U.S. military to the response for Hurricanes Georges and Mitch was helicopter capability. The utility of, and demands on, helicopter assets were so great that (1) establishing priorities for their employment, (2) determining their optimal operating tempo (OPTEMPO), and (3) ensuring adequate funding for helicopter operations became significant issues for commanders.

DISCUSSION: At the scene of the disasters, the most significant USG contribution to the HA/DR operations was the capability of U.S. military helicopters. DoD helicopter crews delivered emergency relief supplies for OFDA to isolated areas of the Dominican Republic after Hurricane Georges devastated that nation, and completed a range of important tasks during the Hurricane Mitch response. During the latter disaster operations, DoD helicopter units completed search and rescue (SAR) missions that (along with Special Forces and SEAL boats) rescued more than 1,000 storm victims; evacuated personnel (including the President of Honduras); completed medical evacuation (MEDEVAC) missions; provided aerial reconnaissance, including support of damage assessments; delivered relief supplies; transported key disaster responders, such as medics; and carried VIP and media visitors. In the affected countries, difficult terrain, flooding, and infrastructure damage were conditions that made the helicopter invaluable. DoD planners can expect similar requests for helicopter support during future foreign disasters. Several factors related to helicopter support challenged commanders and staffs during these operations, and are likely to occur in future operations:

- **Establishing Priorities:** Establishing priorities for allocating the limited DoD helicopters was the most challenging issue. U.S. military commanders faced three prioritization challenges: (1) allocation among affected nations, because each devastated nation wanted more helicopter assets than could reasonably be provided; (2) allocation between delivery of relief supplies, on the one hand, and information support missions (assessment trips, media transport, VIPs), on the other; and (3) allocation between direct relief delivery flights versus transport of logistical support for the helicopters to extend the range of operations. Sorting out the latter issue was particularly difficult. During the early stages of the emergency response, U.S. military commanders worked hard to expand the hub and spoke system for delivery of relief supplies as floodwaters receded and more airfields resumed operations. Expanding hub and spoke operations required setting up fuel bladders and related logistics support at newly opened airfields to establish forward

refueling points, and helicopters were employed for this mission. As this process evolved, humanitarian organizations at times pressured U.S. military commanders to allocate available helicopters solely to direct relief flights, perceiving inaccurately that the delivery of bladders and other logistical support was competing with the humanitarian mission.

- **Operating Tempo Issues:** Observers within and outside the U.S. military noted that host nation military forces conducted helicopter operations at extraordinarily high tempo, placing stress on equipment and crews, with little regard for sustaining these operations over the immediate response period. By contrast, these observers reported a significant time lag of four to five days between the arrival of some U.S. military helicopters and initiation of relief operations. Delays in starting and continuing DoD flights were attributable to standard operating practices such as requirements for crew rest, need for orientation flights, and routine equipment maintenance. Although these requirements were justified, and contributed to the reliability record during the operation, they resulted in U.S. forces standing by during the extremely limited window of opportunity for some relief missions. This situation adversely affected the morale of these U.S. forces forced to stand by in the midst of the relief effort, as well as relations with host nation disaster responders. The operating tempo of U.S. military helicopter resources was also affected by the rotation of Reserve Component crews about every two weeks, with each rotation requiring additional periods of indoctrination and orientation.
- **Funding Support:** The pre-disaster establishment of fund cites by OFDA to cover DoD helicopter use facilitated early and vital helicopter operations. Anticipating the magnitude of Hurricane Mitch long before it struck Central America, and recognizing the likelihood that DoD helicopter support would be required somewhere in the region, OFDA and DoD concluded a pre-disaster agreement to provide OFDA funding for a specified amount of “blade-time” once the hurricane hit. This pre-funding initiative provided funds to enable DoD to cover the costs of deploying its resources to the affected area in support of USG relief operations rather than seeking funds from within DoD to cover these unexpected requirements. This arrangement speeded up the emergency response, even while longer-term funding issues were being debated within the USG. In view of the fact that such organizations as OFDA required assistance from helicopters to conduct assessments, both to conduct aerial reconnaissance as well as to move staff to otherwise inaccessible spots, it was necessary for U.S. military commanders to account for helicopter hours used for that purpose to justify reimbursement. The main challenge was to determine how much blade time could be provided to OFDA in light of other priority competing requirements for the scarce helicopter assets, and this required difficult on-the-ground coordination.

RECOMMENDATION HS-1-1: Given the very high probability that DoD helicopter assets will be utilized in all categories of future rapid-onset disasters, and recognizing their importance to rapid assessments, immediate SAR missions, medical evacuation, and transport of emergency supplies, the Joint Staff Director for Logistics, in coordination with the geographic combatant commands and Service components, should develop tailored self-sustaining helicopter capabilities packages to support the immediate requirements of HA/DR missions. The procedures should also be established to facilitate early sourcing and deployment authorization for these packages when the USG responds to a foreign disaster.

RECOMMENDATION HS-1-2: Recognizing the importance of launching helicopter operations as quickly as possible upon notification of an impending disaster, the Office of Peacekeeping and Humanitarian Assistance, in conjunction with the unified combatant commands, should (1) facilitate indefinite quantity pre-funding agreements with OFDA for helicopter assets upon receipt of early warning of an impending rapid-onset foreign disaster; (2) develop a standard format for the execution of such agreements; and (3) seek to negotiate a stand-by global agreement for OFDA support of helicopter operations.

RECOMMENDATION HS-1-3: Recognizing that the period available for successful relief operations after a disaster is normally brief, the Services should review their procedures for crew rest, aircraft maintenance, and area familiarization flights during the emergency phase of disaster relief operations with a view to balancing those requirements with the urgent need to assist the victims. This review should also consider providing local commanders reasonable flexibility in waiving these requirements during time-sensitive disaster relief missions.

RECOMMENDATION HS-1-4: Geographic combatant commands requesting helicopter resources for HA/DR operations should take into account the need for additional crews to comply with crew rest requirements while maintaining a high operating tempo during emergency, time-sensitive operations.

INFORMATION SUPPORT (IS)

FINDING IS-1: DoD's use of open, unclassified procedures facilitated interagency and international coordination during Hurricane Mitch operations. Working in an unclassified environment – when consistent with national security considerations – should be the first option for DoD in similar HA/DR operations in the future.

DISCUSSION: An important characteristic of foreign disaster response missions is the extensive coordination requirements within the USG interagency process and with a wide range of non-USG civilian agencies. Many of the participating organizations do not have USG security clearances, and, if information is classified, it cannot be shared with those participants. Reports from both the Joint Staff working on the Mitch crisis and from JTF Aguila indicate that planning and conducting core disaster relief operations in an unclassified environment was beneficial. For example, in the interval between Hurricanes Georges and Mitch, Joint Staff J3 personnel relocated the response cell from the National Military Command Center to the J3 area, which facilitated contacts with civilian partners in an open environment.

RECOMMENDATION IS-1-1: To facilitate civilian-military cooperation during foreign HA/DR operations, geographic combatant command Functional Plans (FUNCPLANS) should require operations to be conducted in an open environment, unless otherwise directed by the commander-in-chief.

RECOMMENDATION IS-1-2: Draft joint publication 3-07.6, *Joint Tactics, Techniques, and Procedures for Foreign Humanitarian Assistance*, should note the value of conducting military support to foreign HA/DR operations in unclassified environments to enhanced interagency coordination.

FINDING IS-2: Many disaster-prone regions are assigned low priority for imagery, mapping, and other information product support, potentially limiting the effectiveness of disaster relief operations.

DISCUSSION: SOUTHCOM was not accorded adequate priority in the collection and production of information (including intelligence) during Hurricane Mitch operations. Within SOUTHCOM's area of responsibility, only Cuba is a Tier 1 country and Colombia is a tier 2 country; all others are Tier 3. These priorities also affect the assignment of U.S. military intelligence personnel in the region. For example, manning at the Defense Attaché Office in Managua, Nicaragua was authorized six personnel but only had two personnel when Mitch struck. The SOUTHCOM situation reflects the conditions in other geographic combatant commands for regions with a high probability of HA/DR operations, but low probability of combat missions.

When HA/DR operations occur in these lower priority areas, the staffs have little useful data or information to convert the FUNCPLAN to an operations order. Problems that occurred during the 1998 hurricane responses included the following:

- **Lack of Transportation Infrastructure Information:** Transportation infrastructure information on capacities of ports, airfields, and lines of communication in the SOUTHCOM area of responsibility (AOR) was incomplete. Available imagery was focused on a few of the locations in the AOR, and availability of baseline data on the pre-Mitch condition of infrastructure was inadequate.
- **Availability of Maps:** Availability of up-to-date maps in sufficient quantity was a major problem. Maps were often not available, out of date, and/or not consistent as to place names. The Defense Logistics Agency (DLA) initial concept for map support to deploying units was to provide one complete bundle of all necessary maps. The available stocks were too low to support the number of units deployed, and DLA could not print sufficient quantities of maps before deployment. The National Imaging and Mapping Agency (NIMA) had to purchase hundreds of commercial maps for Hurricane Mitch operations. For Hurricane Georges, JTF Full Provider had difficulty in acquiring necessary maps of the Caribbean region.

The SOUTHCOM AOR, for example, is not an area where major theater wars or even secondary level contingency operations are expected to occur, and any threat of internal strife requiring the insertion of peace operation forces from external resources is not accorded great concern. The major threat concerns drugs, both their availability and trafficking. Other concerns are for the continued and increasing flow of illegal

immigration from the SOUTHCOM AOR into the United States, and the continuation of the democratic process in the region, requiring a strong engagement program for SOUTHCOM. As a practical matter, such threats and concerns do not receive the same national priority as do issues in the AORs of other geographic combatant commands. A result is the allocation of information gathering and production resources to such regions often lags behind those of the other geographic combatant commands.

RECOMMENDATION IS-2-1: The Secretary of Defense should recommend to the National Security Advisor an interagency study to identify where natural and manmade disasters are likely to occur and to determine where the USG is likely to respond. The Office of Peacekeeping and Humanitarian Assistance, in conjunction with the Director, Defense Intelligence Agency, should use the study's result to increase the priority for information and intelligence support for these areas and make this information available to the affected geographic combatant commands.

LEGAL AFFAIRS (LA)

FINDING LA-1: During Hurricane Mitch operations, the JTF commanders and staff were confronted with a number of legal issues between the USG and the host nations that had to be managed quickly to allow relief operations to proceed. Commanders assigned HA/DR missions in the future will likely confront similar sets of international legal issues.

DISCUSSION: Before the military forces responded to Hurricane Mitch, various international agreements were concluded relating to the status of U.S. forces in the Central American countries.²⁹ Generally, international agreements relating to status of forces include provisions on personnel status, weapons possession, criminal and civil privileges and immunities, claims against the United States, visa waivers, and tax and customs exemptions. It is both a political and a legal decision to decide when a SOFA is needed. For U.S. military operations other than war, the USG will attempt to negotiate a formal SOFA or an agreement that contains these types of provisions. However, many host nations resist signing an international agreement containing such elements, primarily out of concern that the agreement will infringe on their sovereign rights. In Central America, that concern and hesitancy was heightened by the history of a large U.S. presence in portions of Central America early in the 20th Century. Timely negotiation of SOFAs or related agreements are especially important in the case of rapid-onset natural disasters, since the absence of such agreements may impede disaster relief operations in the immediate post-disaster phase.

During Mitch, the USG country teams were able to negotiate with some host governments the exchange of diplomatic notes about the status of U.S. military forces. The U.S. had an international agreement with Honduras, which had some status of forces provisions contained in it. The U.S. had other international agreements with the other Central American countries but these agreements were not considered adequate for deployments during Hurricane Mitch operations. Guatemala, however, never concluded any agreements relating to the status of forces, and Nicaragua and El Salvador only agreed to exchange diplomatic notes with some of the standard SOFA provisions after the

²⁹ See Department of Defense, Directive 5530.3, International Agreements (11 June 1987) w/ C1 (18 Feb. 1991), at E2 [hereinafter DoD Dir. 5530.3]. International agreements relating to military forces are referred to as Status of Forces Agreements, or SOFA, or Visiting Forces Agreement. In general, an international agreement may be styled a memorandum of understanding or memorandum of agreement, exchange of letters, exchange of diplomatic notes (“Dip Notes”), technical arrangement, protocol, note, or memoir.

deployment of U.S. forces for the relief effort. These diplomatic notes included provisions related to criminal jurisdiction, wearing of uniforms, duty free imports, entrance fees, and claims against the USG.

The content of the diplomatic notes that were exchanged varied from country to country because of national sensitivities. For example, Nicaragua was sensitive to American soldiers carrying weapons while on a humanitarian mission. So, the standard SOFA provision allowing the weapons to be carried was eliminated from the U.S.-Nicaragua diplomatic note.³⁰

Generally, these diplomatic notes lacked “basing” provisions. Commanders and staff officers, therefore, spent a considerable amount of time worrying about the details of how the JTF personnel were going to be housed on a host nation’s military base. Another international issue that was unresolved in the notes was diplomatic clearances for aircraft. Since Mitch was a regional disaster, aircraft often crossed international boundaries when delivering resources to the various task forces located throughout the region. Weather and changes in priorities constantly modified the aircraft schedules. The countries in the region could not possibly process the diplomatic clearances as fast as the aircraft schedules changed. JTF Aguila reported that the task force would have benefited from the negotiation of a blanket aviation clearance for the entire AO.

RECOMMENDATION LA-1-1: The Office of Peacekeeping and Humanitarian Assistance, in conjunction with the General Counsel, Office of the Secretary of Defense and the Assistant Legal Advisor for Treaty Affairs at DoS, should develop a contingency plan for timely negotiation of SOFAs, or SOFA-like agreements, in the aftermath of rapid-onset natural disasters. The plan should address responsibilities, assignments, resources, and clearance procedures, and have as its objective a timely process for permitting U.S. military forces appropriate access for disaster response operations. The plan should also include checklists of key considerations in such bilateral agreements, and model SOFAs to facilitate the work of U.S. embassies and geographic combatant commands.

30 U.S. military forces maintained that, since there was no provision prohibiting them from possessing weapons, they would still carry the weapons. This was discussed with Nicaraguan officials before deployment. When the U.S. military arrived, weapons were locked in a box on the aircraft, soldiers deplaned without weapons, and the weapons box came later. The U.S. military did carry weapons in their vehicles in the field; the JTF commander required TF members to keep a low weapons profile while working. On departure, each soldier carried his/her personal weapon, since by then the host nation was comfortable with the U.S. military presence. Weapons for personal protection did not appear to be an issue in other countries.

RECOMMENDATION LA-1-2: The Office of Peacekeeping and Humanitarian Assistance, in conjunction with the General Counsel, Office of the Secretary of Defense and the Office of the Legal Advisor, DoS, should examine the possibility of pre-negotiating SOFAs or SOFA-like agreements with disaster-prone countries in the AORs of geographic combatant commands. These organizations should develop a priority list and timetable for completing such agreements, prior to the actual occurrence of a major natural disaster.

FINDING LA-2: Early deployment of legal personnel with the disaster response JTFs, and involvement of legal personnel in the early stages of planning relief operations, would have improved Hurricane Mitch operations. Such early engagement is likely to contribute to the success of future disaster relief operations.

DISCUSSION: During Hurricane Mitch operations, commanders and managers at all levels discovered the myriad legal and regulatory issues involved in international negotiations and the process of aggregating resources to conduct humanitarian assistance. Legal personnel participated at strategic national, theater, and operational levels during the disaster operations. They reviewed strategies, operations plans, and fiscal plans, and assisted in preparing and negotiating SOFAs. However, one major deficit noted by U.S. military legal personnel was their inability to provide early advice to the JTF Aguila commander.

Legal personnel reported delays in their designation and deployment, which prevented them from assisting the JTF commander and his staff with critical issues. These issues included a SOFA, housing and support arrangements, military justice jurisdiction issues, and claims resolution procedures. Once the JTF Aguila legal personnel were designated, they were able to focus on training assigned personnel on rules of engagement and human rights. As was the case with other personnel, the legal personnel found it difficult to find essential information on the AO.

RECOMMENDATION LA-2-1: The Office of the Staff Judge Advocate at the geographic combatant command should prepare the JTF commander for SOFA related issues prior to the commander's deployment. The office should also be prepared to dispatch staff to assist the U.S. Country Team with the negotiation of SOFAs or related agreements and a legal advisor should be deployed with the geographic combatant command Deployable Joint Task Force Augmentation Cell (DJTFAC).

RECOMMENDATION LA-2-2: JTF commanders assigned to disaster relief missions should designate their respective legal advisors soon after being selected. This legal advisor should be in close contact with the JTF planning staff to provide both the commander and staff with legal advice for the operations as they unfold. The JTF commander's legal advisor should be assigned the further responsibility of alerting, briefing, and facilitating the preparation of legal advisors of deploying component units. In addition, the JTF legal advisor should ensure that legal advisors have appropriate inputs to pre-deployment training.

RECOMMENDATION LA-2-3: The JTF commander, before deployment, should ensure that his legal advisor reviews international agreements, diplomatic notes, and memoranda of understanding to which the disaster-affected country is a party. The legal advisor can advise the commander of additional agreements that should be negotiated or gaps in existing agreements, and begin to work that set of issues with the geographic combatant command and other appropriate USG authorities.

LOGISTICS SUPPORT (LS)

FINDING LS-1: Commanders, headquarters staffs, and JTF task units were assembled from combat support and service support force elements to respond to both Hurricanes Georges and Mitch. Pre-designation of these elements, especially the commanders and staffs, would enable them to train and exercise for these missions.

DISCUSSION: The majority of the DoD military resources deployed and employed in the HA/DR response to the 1998 hurricanes came from combat service support units from the Services. There were some exceptions (such as the employment of Special Force units during the Hurricane Mitch SAR operations) but, for the most part, the “loggies” bore the brunt of the overall effort. Capabilities provided to the JTFs included logistic headquarters; task elements such as engineers, medical, supply, transportation, fuel handling and storage, and maintenance units; and personnel for contracting and finance activities. The commanders of JTF Aguila and Full Provider were also selected, in part, because of their logistical backgrounds.

When selected and assigned the HA/DR mission during these operations, the commanders, headquarters staffs, and task units were not trained or experienced in the USG procedures for either domestic or foreign disaster relief operation. Their training focus was correctly based on wartime tasks contained in their respective units’ mission essential task lists (METL). When assembled into a JTF, the commanders, staff, and task units had never trained or worked together, and many of the personnel were from the Reserve Component, limited to two weeks of active duty service. This created a chaotic and turbulent situation with the newly formed JTFs.

If these combat service support commanders, staffs, and task units were pre-designated from the Active Component for this mission, they could undergo essential training to prepare them for these types of operations. These pre-designated combat service support units could be rotated for fixed periods of training and on-call response similar to the procedures employed for Marine Expeditionary Units (MEU). Using Active Component units for this mission would require similar Reserve Component units to backfill the active unit for its wartime mission for the period of HA/DR mission assignment. These changes to force management procedures could significantly improve the sourcing of DoD’s domestic and foreign disaster assistance, and enable the trained commanders and staffs to employ DoD resources more effectively and efficiently when called upon. [See also Finding CC-2].

RECOMMENDATION LS-1-1: The Director for Logistics, Joint Staff, in coordination with the Office of Peacekeeping and Humanitarian Assistance (for foreign disasters) and Director of Military Support (DOMS) (for U.S. domestic disasters) should develop and implement force management procedures to pre-designate HA/DR commanders, staffs, and task units from the Active Component to facilitate sourcing and training of the forces employed in these type of operations.

RECOMMENDATION LS-1-2: The Joint Staff Director for Operational Plans and Interoperability (J7) should ensure that participants in Joint and Service exercises that have HA/DR scenarios include combat service support personnel and units, and that JTF and TF leadership positions are assigned to these personnel during those exercises to prepare them for future contingency operations. Units that are likely to be required to support HA/DR operations should include relevant tasks in the unit mission essential task lists.

FINDING LS-2: During Hurricane Georges, SOUTHCOM was required to respond simultaneously to two separate and different USG management systems to provide support to civilian authorities during domestic and foreign disasters. Requests for assistance, funding, and other procedures for these operations can be standardized to minimize differences.

DISCUSSION: Procedures for coordination between DoD and the USG lead agencies responsible for disaster response – the Federal Emergency Management Agency (FEMA) for operations in U.S. states and territories and OFDA for foreign operations – vary significantly. Two geographic combatant commands have both domestic and foreign HA/DR responsibilities. SOUTHCOM’s area of responsibility (AOR) includes Puerto Rico and U.S. Virgin Islands, as well as foreign territory, and PACOM’s AOR includes the Territories of Guam and American Samoa, and foreign nations.

The division of civilian agency responsibility has created two separate and different sets of procedures that impact on how DoD provides its support to civilian authorities.

- **Domestic HA/DR Responses:** During a response to a domestic disaster, requirements are generated by the on-scene Federal Coordinating Officer (FCO), who transmits a Request for Assistance (RFA) to the co-located Defense Coordinating Officer (DCO). The DCO then forwards the RFA to the Director of Military Support (DOMS), the Executive Agent acting for the Secretary of Defense, to coordinate efforts within DoD to satisfy the FCO requirements. FEMA reimburses the DoD for all RFAs it generates.
- **Foreign HA/DR Responses:** During a foreign response, the requirements are submitted by OFDA in either of two ways. In accordance with the DoD-OFDA memorandum of understanding, OFDA sends a message to the Office of Peacekeeping and Humanitarian Assistance (PKHA) in the Office of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict. That office disseminates the foreign HA/DR requirements through the Joint Staff to the appropriate DoD organizations. OFDA may also request assistance in the field directly to the supported JTF or other representative of the geographic combatant command. When this occurs, the requirements are consolidated and forwarded to the Chairman of the Joint Chiefs of Staff (CJCS) for approval and sourcing. OFDA reimburses DoD for all RFAs it generates.

During Hurricane Georges, SOUTHCOM’s requirements were generated by both FEMA and OFDA and its response had to be coordinated with these agencies simultaneously using different internal DoD and external USG processes. Significant

differences between the domestic and foreign disaster response systems include: procedures for financial reimbursement for DoD; processing RFAs; the role of the states and foreign governments; limitations on the mobilization and deployment of Reserve Component and National Guard forces; and others.

These different USG and DoD systems require U.S. military commanders and staffs to comply with both systems when a single disaster affects both domestic and foreign populations and territories. During Hurricanes Georges and Mitch, DoD personnel exhibited varying degrees of familiarity with the USG civilian domestic and foreign disaster management systems and experienced coordination problems using the different DoD systems. Disaster response exercises, such as Exercise Blue Advance (conducted by SOUTHCOM in 1998), serve to educate participants on these disaster response procedures, and this exercise was considered a valuable preparation by SOUTHCOM participants. However, more standardized procedures would reduce the time need to train military commanders and staff, and facilitate their support to civilian authorities during a disaster.

RECOMMENDATION LS-2-1: The Director for Logistics, Joint Staff, in conjunction with the Office of Peacekeeping and Humanitarian Assistance (for foreign disasters) and DOMS (for U.S. domestic disasters) should initiate a study with the Directors of FEMA and OFDA to standardize the USG and DoD procedures used to provide military support to civilian authorities during both domestic and foreign disaster responses. [See also Finding CI-3].

RECOMMENDATION LS-2-2: SOUTHCOM and PACOM should ensure that their planning, operations, and logistics staffs are trained in and exercise the interagency processes for responding to disasters within their areas of responsibility, and that JTF commanders and staffs assigned disaster response missions are trained in interagency processes prior to deployment.

RECOMMENDATION LS-2-3: The Office of Peacekeeping and Humanitarian Assistance, in conjunction with the Joint Staff J1, should survey Joint and Service schools to document the course content devoted to interagency processes for responding to both domestic and foreign disasters, and recommend, where appropriate, improvements in DoD education of these topics.

RECOMMENDATION LS-2-4: Geographic combatant commands should emphasize exercises that prepare commanders and staffs to respond to interagency processes for domestic and/or foreign disasters, where appropriate.

FINDING LS-3: During Hurricane Mitch operations, SOUTHCOM's exercise of Directive Authority for Logistics (DAFL) over forces placed under its operational control caused funding problems. The doctrine on DAFL requires clarification.

DISCUSSION: In accordance with provisions of 10 USC Sec. 164. (c) (a), DAFL provides the commander of a combatant command with the authority to issue directives to subordinate commands to carry out his responsibilities for effective execution of approved plans, while ensuring economy of operation and the elimination of unnecessary duplication. Under DoD implementation, DAFL is associated with combatant command authority (COCOM) over subordinate *assigned* forces. DAFL is not an authority inherent in operational control (OPCON). The forces deployed during the Mitch response were placed under OPCON of SOUTHCOM, and were not reassigned from other combatant commands to SOUTHCOM by the National Command Authorities (NCA), because of the limited duration of the contingency.

During Mitch operations, some deploying forces under OPCON to SOUTHCOM were directed by the geographic combatant command to purchase specific material to support the operation. For example, naval construction units – assigned to USACOM but placed under OPCON of SOUTHCOM – were directed by SOUTHCOM to deploy with approximately \$1 million of construction material in addition to their basic unit supplies, in order to meet the contingency requirements. SOUTHCOM was exercising its responsibilities to ensure effective execution of the contingency mission while ensuring economy of operation and the elimination of unnecessary duplication. Under the existing DoD procedures, this action resulted in an unplanned funding requirement for the Service component to which the unit was assigned. The funds earmarked by the Secretary of Defense and Chairman of the Joint Chiefs of Staff for the Mitch operation were provided to SOUTHCOM for disaster-related expenditures, and these funds should have been used to reimburse the units directed to purchase the materials.

The issues associated with DAFL are not unique to disaster response, and units assigned to one combatant command are often placed under OPCON of another for a short duration contingency. DAFL procedures need to be clarified in joint doctrine, taking into account the operational, logistical, and funding relationships that are essential to facilitate transparent transfers of units between combatant commands for relatively short duration operations.

RECOMMENDATION LS-3-1: The Director for Logistics, Joint Staff, should examine the intent of directive authority for logistics articulated in 10 USC, and clarify

the DoD implementing procedures to ensure that all conditions of the temporary transfers of units from one combatant command placed under operational control of another are clear. Specifically, only the supported combatant command, with responsibility for carrying out the mission, should exercise DAFL for forces conducting the operation, whether assigned to the supported combatant command or under its operational or tactical control.

FINDING LS-4: Many of the relief supplies and some of the emergency support provided by civilian and military sources during Hurricanes Georges and Mitch were standard materiel required in most disaster relief operations. Identification of the types of supplies, and plans for warehousing and transporting them to the scene of the disaster, as well as pre-positioning key disaster response teams, would expedite future foreign disaster relief efforts, especially when confronting rapid-onset disasters such as Hurricanes Georges and Mitch.

DISCUSSION: During Hurricanes Georges and Mitch, as in most disaster relief operations, similar relief supplies and equipment were delivered to multiple sites in the affected regions. For example, FEMA and OFDA frequently provided, or made arrangements for, plastic sheeting, water storage containers, and blankets in the aftermath of those natural disasters.

These agencies pre-position relief stocks in warehouses close to DoD airlift and sealift. For example, prior to Hurricane Mitch, OFDA maintained a warehouse in Panama, which served as a convenient hub for relief flights throughout Latin America. Although OFDA has now relocated its Panama warehouse to CONUS, this agency continues to stockpile some supplies in the region at Soto Cano Air Base, Honduras to facilitate linkages between relief items and DoD airlift.

During the 1998 hurricanes, DoD provided items it typically provides for HA/DR operations, including helicopters units, electrical power generators, and water purification units. Delivery of these items has become so routine that standard capabilities packages can be developed and delivery of these packages can be preplanned. Disaster relief assessment teams should understand capabilities packages and use them to identify requirements, in order to facilitate the translation of need to capability. Planners should anticipate the requirements for emergency relief packages, determine where they are currently located, and identify and preplan the transportation resources required to deliver them, in order to expedite the delivery of critical emergency support.

The United Nations has developed a number of service modules – capabilities packages typically required during HA/DR operations – that can be provided by either military or civil defense resources. These service modules could be used as a basis for identifying USG response capabilities – civilian and military – that can be employed in either domestic or foreign disasters.

DoD and OFDA continue to experiment with initiatives to pre-position assessment and response teams in regions with a high risk of natural disasters. Prior to

Hurricane Mitch, OFDA deployed assessment personnel with communications equipment to areas likely to be struck by the storm, in order to ensure immediate, accurate, on-scene damage assessment. Unfortunately, Mitch's erratic track caught some of these teams "upwind" and delayed their arrival in the areas actually affected by the hurricane, but the initiative made sense. DoD civil affairs and OFDA personnel – following the FEMA procedures that forward deploy the FCO and DCO before the storm strikes – are now designated for joint watch duty in the Caribbean during hurricane season, to ensure immediate coordinated civilian-military assessments and initial response management for foreign disasters. [See also Finding CD-1].

RECOMMENDATION LS-4-1: The Joint Staff Director for Logistics – in coordination with the geographic combatant commands, the Office of Peacekeeping and Humanitarian Assistance, FEMA, and OFDA – should compile an automated database to support interagency disaster relief planning that identifies the relief items most often required in HA/DR operations, their current availability and location, and the preferred mode of transportation. The interagency team should review where these stocks are currently stored and, if additional pre-positioning is needed, recommend where this should be accomplished and by which agencies.³¹ Generic deployment plans to move the pre-positioned stocks to likely disaster areas should also be developed to facilitate planning and expedite the USG response.

RECOMMENDATION LS-4-2: The Joint Staff Director for Logistics – in coordination with the geographic combatant commands, the Office of Peacekeeping and Humanitarian Assistance, FEMA, and OFDA – should identify recurring civilian and military emergency support packages similar to the United Nations service modules and use these in assessment reporting to facilitate response planning and expedite delivery during disaster responses. The team should also identify which capabilities should be deployed in advance of the disaster and develop interagency procedures to facilitate such deployments.

³¹ Pre-positioning could be either at probable POEs or centrally located deployment points. For budgeting purposes, the costs of transporting relief items or equipment to the pre-position sites, storage, and stock rotation would have to be taken into consideration.

FINDING LS-5: DoD's response to Hurricanes Georges and Mitch reinforced the importance of logistics support for any military operation, but especially during disaster relief operations. These efforts highlighted key shortcomings in logistics support that are likely to occur in future operations, unless organizations take steps to address them prior to deployment.

DISCUSSION: Draft Joint Publication 3-07.6, *Joint Tactics, Techniques, and Procedures for Foreign Humanitarian Assistance*, offers the following guidance on logistics during HA/DR operations: "Lessons-learned indicate that logistics and the associated support facilities and infrastructure necessary to sustain a FHA [foreign humanitarian assistance] operation are frequently underestimated. FHA operations are logistics and engineering intensive. Therefore, the overall logistics concept should be closely tied into the operational strategy and be mutually supporting."

Because HA/DR operations are often likely to be undertaken in austere and resource-constrained environments, logistics considerations will be critical to success. Some of the most critical logistics considerations faced by SOUTHCOM and its deployed JTFs during Hurricane Mitch and Georges operations included the following:

- **Shortages of Petroleum, Oil, and Lubricants (POL):** The available stocks of POL in JTF Bravo's area of operation in the immediate aftermath of the storm, especially fuels for theater airlift and vehicles, were rapidly depleted and emergency resupply measures had to be taken. This shortage was caused by losses and contamination by the storm, the large-scale deployment of supporting units, and increased operational tempo of the response activities.
- **Competing Hub and Spoke Arrangements:** Distribution of relief supplies, such as food and medicine, and movement of relief personnel were accomplished on a hub and spoke arrangement, with Soto Cano Air Base serving as the hub for Honduras and the other affected countries in Central America. The arrangement had several advantages, but one significant drawback. Airlift support to Nicaragua and other countries within JTF Aguila's AOR had to pass through Soto Cano Air Base, which was already congested with incoming traffic and cargo earmarked for use in Honduras. Airlift support and cargo continuing on to other devastated countries like Nicaragua experienced delayed deliveries, and the over-tasked system at Soto Cano Air Base further complicated an already strained in-transit visibility (ITV) system.
- **Supplies "pushed" into the Area of Operations (AO):** The question of whether the theater required logistics on a "push" or "pull" basis (that is, whether supplies were shipped by senior commands based on their

interpretation of needs, or whether supplies were shipped only in response to requests from units on the ground in the AO) was almost moot, in that external agencies and commands pushed material throughout the operation, resulting in aircraft and cargo often arriving unexpectedly at destinations within the AO. Processing this large quantity of cargo was a major logistics issue for on-scene commanders, especially when their own facilities were damaged by the storm.

- **Contracting Issues:** Two contracting problems occurred. One was the urgent need for most units, however small, to have a contracting officer available. Some units did not arrive with organic contracting capability, and this shortfall hampered their contributions to the relief effort. The second contracting problem was the requirement to operate under another Service contracting process, with which deployed units from others Services were often not familiar. In Puerto Rico, for example, U.S. military forces made extensive use of the Navy's Emergency Construction Capabilities Contract Program (CONCAP), but these procedures were not known to deploying Army and Air Force contracting personnel.

RECOMMENDATION LS-5-1 The Joint Staff Director for Logistics, in coordination with the DoD Comptroller and Service contracting staffs, should develop standard DoD joint contingency contracting procedures that accommodate the unique contacting arrangements of each Service.

FINDING LS-6: Logistics support during the Hurricane Mitch response would have been more effective if DoD and USG interagency partners had collaborated in two areas: (1) better coordination in contracting and procurement of logistics goods and services, and (2) better information exchange between supporting combatant commands and supported civilian response agencies. Collaboration in these two areas for future disaster response operations will result in more effective support.

DISCUSSION: DoD and overall USG disaster response logistics would be improved by better coordination among agencies in the areas of contracting and procurement. During the response to Hurricanes Mitch and Georges, there were requirements for several agencies of the USG, including but not limited to DoD, OFDA, and FEMA, to obtain similar commercial services such as construction and road repair materials, water purification units, foreign translators, and local transportation assets – capabilities also sought by the host nation authorities and others.

In the SOUTHCOM area of responsibility there are limited sources of those services. When separate USG agencies contract separately for such services, and compete with local governments, the potential exists for inadvertently bidding up the price, and these actions can rapidly deplete critical resources in the AO. For example, given the high demand for rebuilding materials in Central America in the weeks and months following Hurricane Mitch, local procurement efforts by U.S. military units and OFDA-funded non-governmental organizations (NGOs) may well have been in competition with each other, as well as in competition with local residents and numerous other disaster response agencies operating in the region. Under these circumstances, a USG clearinghouse for contracting activities could be useful. The clearinghouse might serve as the single point where USG agencies coordinate their respective contracting activities, and exchange information on the availability and cost of disaster relief and rehabilitation goods and services.

The DoD and overall USG disaster response would also be improved by better information exchange between supporting combatant commands and supported civilian response agencies. During foreign emergencies, force-providing joint commands like JFCOM and TRANSCOM attempted to anticipate force requirements through liaison with the supported geographic combatant command and, to a lesser degree, by contact with civilian agency information sources. Early and accurate information on requests for assistance (deployable forces or other assets) aids the planning processes at supporting combatant command headquarters, and permits these commands to alert subordinate

commands about impending missions. Because DoD strategic lift assets are often in high demand for foreign disasters, and there are competing priorities, visibility into civilian agency needs is especially important to TRANSCOM and its components. In fact, for domestic disaster planning, TRANSCOM communicates regularly with FEMA on potential requirements for TRANSCOM assets. For foreign responses, however, communications between JFCOM and TRANSCOM, on the one hand, and organizations like OFDA, on the other, is a-systematic. Regular information exchange between those organizations would facilitate planning and expedite responses after foreign disasters, both from the supporting combatant commands and from the USG agencies that rely on DoD support.

RECOMMENDATION LS-6-1: The OSD Office of Peacekeeping and Humanitarian Assistance, in coordination with the Joint Staff Director for Logistics and the DoD Comptroller, should conduct an interagency study with FEMA, OFDA, the DoS Bureau for Population, Refugees, and Migration (PRM), and the U.S. Department of Agriculture (USDA), to exchange information on contracting and procurement processes in the aftermath of disasters. Participating agencies should create an information network among contracting authorities of the various USG agencies active in foreign disaster response, operating both in Washington and at disaster sites. Procedures for coordinating contracting and procurement activities should also include grantees of USG agencies, since OFDA, PRM, and USAID generally rely on NGO and other non-USG grantees to manage many of their disaster response activities.

RECOMMENDATION LS-6-2: The Office of Peacekeeping and Humanitarian Assistance should develop procedures to facilitate information exchanges between DoD supporting combatant commands and federal civilian agencies that are likely to require military assistance following foreign disasters. These procedures should provide (1) DoD with information on the capabilities these agencies are likely to request, (2) civilian agencies with information on capabilities that DoD could provide, and (3) a system for prioritizing requirements between civilian and military sources. The procedures should also establish when and where liaison officers should be exchanged among the participating interagency organizations during disasters. The results should be documented in a federal response plan that is used during interagency exercises to facilitate cooperation.

FINDING LS-7: The Supply Management (SUMA) software package developed by the Pan-American Health Organization (PAHO) was widely utilized by civilian agencies during the Hurricanes Georges and Mitch relief operations. SUMA offers the potential for streamlining civilian relief operations, improving accountability, and reducing the burden on DoD support requirements.

DISCUSSION: SUMA is a basic, but reportedly effective, software package designed for civilian humanitarian agencies managing arriving relief supplies in disaster environments.³² PAHO, the designer of the package in coordination with the World Health Organization (WHO), promotes the usage of the system throughout Latin America, and is extending its application worldwide. The objective of SUMA is to build a capacity in affected countries to account for and deal effectively with incoming relief supplies. Additionally, it provides a mechanism whereby neighboring countries can provide assistance to a disaster-affected nation in sorting and identifying incoming relief supplies by providing SUMA-trained and SUMA-equipped teams to supplement host nation capacity.

SUMA was used widely by NGOs, UN agencies, and local government relief agencies during the Hurricane Mitch response. Increased use of SUMA or other relatively simple supply management tools should reduce the chaos of supply management during disaster relief operations, especially the management of donated commodities. If properly utilized by civilian relief agencies, SUMA has the potential to streamline logistics processes, enhance accountability, and facilitate DoD airfield management support for civilian agencies. For example, if SUMA or SUMA-like products could incorporate standardized data on cargo cube and weight factors, civilian and military planners would have greater insight into transport, materials handling, and storage requirements in the AO. The SUMA supply coding system could serve as the seed for a more widespread civilian-military effort to standardize the management of relief supplies arriving in disaster settings.

RECOMMENDATION LS-7-1: The Joint Staff Director for Logistics should examine the SUMA system, to determine how the DoD systems providing in-transit visibility (ITV) can be made interoperable with this global system. The combatant commands should be aware of the SUMA system and include plans to establish connectivity with it in FUNCPLANS.

³² More information on SUMA is available at <www.disaster.info.desastres.net/SUMA/>.

TRANSPORTATION AND MOVEMENT CONTROL (LT)

FINDING LT-1: U.S. military strategic airlift and sealift operations met the requirements of the 1998 hurricane relief operations, but many improvements could be made in the effectiveness and efficiency of strategic transportation operations, especially coordination between TRANSCOM and its interagency and DoD customers.

DISCUSSION: One the most important resource that DoD contributes to HA/DR operations is strategic airlift and sealift. There are many elements of this capability: the aircraft, ships, and their crews; the Joint Operational Planning and Execution System (JOPES); the uniquely qualified organizations that perform key functions at ports of embarkation (POEs) and ports of debarkation (PODs); and the command and control structure and automated support systems. The organization with responsibility for this support is U.S. Transportation Command (TRANSCOM) and its component commands – Air Mobility Command (AMC), Military Sealift Command (MSC), and Military Traffic Management Command (MTMC).

The strategic transportation assets provided during the Georges and Mitch operations met most requirements, in an environment that was urgent, chaotic, and stressful. The proximity to the continental United States (CONUS) contributed to the success of the operation. The flow of units and relief cargo from CONUS or other locations to the Georges and Mitch AOs, once in progress, provided the supported combatant command and other civilian agencies with the resources needed to conduct the HA/DR mission. A number of management issues were identified as a result of these operations and they are described below.

- **Gaps in Interagency Coordination:** Better coordination on transportation planning and execution is required between TRANSCOM and its interagency customers, especially FEMA and OFDA for HA/DR operations. The Movements Interagency Working Group (MIWG) includes many of the civilian users of military lift and is seeking to improve pre-crisis planning between TRANSCOM and FEMA, OFDA, DoS, and the FBI for some contingency operations, but similar coordination for HA/DR contingencies is still required. The civilian users of DoD transportation should also exchange liaison officers with TRANSCOM during movements planning and execution to facilitate effective and efficient operations. [See also Finding LS-6].
- **Gaps in Internal DoD Coordination:** More effective coordination between TRANSCOM and the geographic combatant commands, the Joint Staff, the National Guard Bureau, and Reserve Component organizations would also facilitate planning and execution of strategic airlift and sealift. The Strategic

Mobility System (SMS), intended to collect the air, ground, and sea movement requirements of Active and Reserve Component and National Guard units in one database, could help facilitate such improved coordination.

- **Availability of Strategic Airlift:** During the Hurricane Mitch response, TRANSCOM had competing airlift requirements to support the President's visit to Japan and to support the deployment of combat forces to Southwest Asia in response to threatening actions in the region by Iraq. These requirements had higher priorities and reduced the available lift to support ongoing HA/DR operations. Some participants suggested that the size of the strategic airlift alert pool and other withhold requirements may be larger than is necessary. If these requirements were reduced, additional airlift might be available to meet urgent needs during HA/DR operations. Readiness rates, especially for C-141 and C-5 aircraft, may also have affected the availability of strategic airlift for Hurricane Mitch operations.
- **Control of Airlift:** Visibility into the flight schedules for AMC-funded missions was relatively easy. When, on the other hand, airlift missions were conducted as training missions by the National Guard, there was little information provided to the receiving organizations at the APOD. Receiving units had to contact National Guard organizations directly by commercial telephone to obtain flight information. Unplanned and uncoordinated arrivals at already congested APODs disrupted ongoing operations.
- **Airlift versus Sealift:** Many users called for airlift as the mode of choice for transportation, when more economical movement by sea could meet delivery time requirements, allowing only the highest priority items to be transported by air. Customers needed to understand that these decisions were based on overall priorities and availability of lift, not their individual desires. Closer coordination by customers with TRANSCOM can facilitate movement planning and execution.
- **Inefficiencies at CONUS Pick-up or Embarkation Points:** Pick-up points in CONUS for units and materiel were often specified by the requesting organization to meet its requirements, without coordinating with TRANSCOM. In a number of cases, TRANSCOM would have recommended pick-up points that could have saved time and money. TRANSCOM attempted to accommodate users' desires, but the users did not realize the impact of added time and cost of specifying pick-up points. In addition, cargo often arrived at the sea ports of embarkation (SPOEs) after the directed sailing date for the ship; these delayed arrivals resulted in ship utilization rates of less than 50 percent in some cases.
- **In-Transit Visibility:** The in-transit visibility (ITV) of arriving units and cargo during the hurricane response was limited. Information on incoming aircraft was not always available for those at aerial ports of debarkation

(APODs), and even less was known about what was on board arriving aircraft. In some instances, it was necessary to call the APOE to identify what was on board an aircraft once it was known to be inbound.

- **Misunderstanding of TRANSCOM Constraints:** TRANSCOM operates under certain constraints that were not fully understood by its customers. Without a fund cite and the time-phased force and deployment data (TPFDD), it could not begin flowing a force, nor could any lift mission be initiated without a fund cite. TRANSCOM did not accept earliest and latest arrival dates that it could not meet; the scheduling time needed to coordinate a priority air movement is 72 to 96 hours, and a more urgent departure of 18 to 24 hours will only be considered if validated by a flag officer. Many movement requests were submitted without fund cites, and urgent movement requirements were not validated as required.
- **Applicability of Joint Operational Planning and Execution System (JOPES) Procedures to HA/DR Contingencies:** The JOPES procedures used to plan the deployment required a TPFDD to be created on short notice to schedule and manage the movement of the forces. Many of the units were small and often joined together in *ad hoc* arrangements, which contributed to the complexity of the process. Determining force composition, de-conflicting times to move, and identifying destinations were all challenges because many personnel creating the TPFDD, such as the DJTFAC in El Salvador for Task Force Aguila, had no experience with these procedures and few of the necessary tools to accomplish the task. Those working on these requirements offered two explanations for the apparent inefficiencies of applying JOPES to disaster operations: (1) there was a lack of familiarity with deployment procedures at the unit-level, especially the small elements that deployed, and (2) the existing process and procedures may be well designed for supporting large deployments to operations such as Desert Shield/Storm, Bosnia, or Kosovo, but are less responsive to the smaller and less structured requirements for deployment to HA/DR operations. Many thought the use of the Internet and email has greatly speeded up the overall process, but there are some who consider JOPES procedures inadequate for disaster response deployments.
- **Urgency of Deployment versus Proper Procedures:** During contingency or wartime operations, the JOPES procedures replace the Defense Transportation System (DTS) procedures used in peacetime. This transition results in some loss of ITV when shipments of materiel for individual consignees are aggregated to cargo increment numbers (CINs) to reserve lift to a destination. Because of pressure to expedite strategic movements, timely validation of CINs could not be accomplished in many cases, causing interruption in cargo flow to the theater.

RECOMMENDATION LT-1-1: The Joint Staff Director for Logistics, in coordination with the Office of Peacekeeping and Humanitarian Assistance and other interagency participants, should expand the scope of the Movements Interagency Working Group and the Strategic Mobility System to include HA/DR domestic and foreign responses. The procedures developed by these groups should be incorporated into the federal response plans for these types of contingencies, and into exercises designed to train interagency participants in the use of the procedures. Exchange of liaison officers should also be incorporated into the federal response plans.

RECOMMENDATION LT-1-2: The Chairman of the Joint Chiefs of Staff should direct a review of the strategic airlift alert pool requirement and any other similar “withhold requirements” to determine if they can be reduced, and to determine if the airlift priority of HA/DR operations should be increased.

RECOMMENDATION LT-1-3: The Joint Staff Director for Logistics, in coordination with TRANSCOM and the National Guard Bureau, should clarify procedures for the National Guard’s use of strategic airlift during HA/DR contingencies in order to provide better DoD visibility into the missions these aircraft fly and to achieve greater unity of effort during the operation.

RECOMMENDATION LT-1-4: TRANSCOM should develop and distribute a customer handbook for both civilian and military users of its capabilities. The handbook should outline procedures to schedule, and constraints on the use of, its resources, and provide necessary details on how to coordinate customer requirements with its organization.

RECOMMENDATION LT-1-5: The Joint Staff Director for Logistics, in coordination with the Deployment Process Owner, the J4 of Joint Forces Command, should examine the JOPES procedures and determine if they can be modified to accommodate the needs of the small and *ad hoc* groups of units that typically deploy to HA/DR contingencies.

FINDING LT-2: Execution of the theater portion of transportation requirements involved many organizations that had little pre-crisis experience working together. These operations went well, but valuable lessons were identified that have application to similar contingencies in the future, especially planning for Reception, Staging, Onward Movement, and Integration (RSOI) during HA/DR operations and the organizations and procedures used to manage theater airlift.

DISCUSSION: While the theater RSOI and transportation operations were effective, there were a number of factors that were not considered in planning that had to be resolved in the chaotic environment during execution, resulting in some inefficiencies.

- **Planning for Reception, Staging, Onward Movement, and Integration (RSOI):** The requirements for RSOI had not been planned for HA/DR operations like the Mitch response. Capabilities needed to perform these tasks were not included in the TPFDD and this slowed the re-assembly of deploying units on arrival and contributed to the congestion at the PODs. RSOI planning was also made difficult because when personnel developed the TPFDD, they did not know where the arriving units would be required to operate after arriving in theater. Final destinations for most units in the TPFDD were the APODs and SPODs, and onward movement had to be planned after the units arrived and while they were being re-assembled.
- **Theater Airlift Operations:** Theater airlift activity increased exponentially as requirements became known and the response from the host nations, U.S. deploying units, and other international responders used the limited facilities in the theater. A hub and spoke system was used for scheduling and controlling the theater airlift operations at both Soto Cano and Comalapa Air Bases. Theater airlift missions for helicopters and fixed wing aircraft (C-27s, C-130s, and C-12s) included transportation of assessment teams, SAR, delivery of disaster relief supplies, transport of distinguished visitors, and other flights. The theater airlift activities added to the workloads generated by strategic airlift flowing into the host nation's facilities, and the increase in air operations required an augmentation of host nation air traffic control personnel to handle the increased operational tempo. Many *ad hoc* arrangements had to be made. The operating tempo in and out of Soto Cano became nearly unmanageable at times.
- **Management of U.S. Airlift:** A Director for Mobility Forces (DIRMOBFOR) was deployed to Puerto Rico for the Georges response and one each to Soto Cano and Comalapa Air Bases for the Mitch response. They were primarily involved with coordinating the strategic airlift requirements and were very useful, even though they were formally assigned to the AMC, not to SOUTHCOM or the JTFs. Because of different procedures for

domestic and foreign HA/DR responses, the DIRMOBFOR in Puerto Rico coordinated with FEMA through the Defense Coordinating Officer, but the DIRMOBFORs in Central America coordinated with the JTFs.

- **Support of Airlift Operations:** The Tanker Airlift Control Elements (TALCEs) and the Air Mobility Elements (AMEs) operation at the APODs were very useful, and kept the operations flowing smoothly. Because the TALCEs were removed immediately after the initial force flow was completed, others who were not trained in these tasks had to perform them as the humanitarian supplies continued to arrive at the APODs. There appear to be insufficient TALCEs to meet the requirements.

RECOMMENDATION LT-2-1: The Joint Staff Director for Logistics, in coordination with TRANSCOM and the geographic combatant commands, should review FUNCPLANS for HA/DR contingencies to ensure that the Reception, Staging, Onward Movement, and Integration, air traffic control augmentation, and other requirements for HA/DR operations are identified and provided sufficient movement priority to ensure they are in place to handle the anticipated workloads when they are scheduled to arrive. A notional TPFDD or checklist could be included in the FUNCPLANS to ensure the appropriate resources are planned and deployed.

RECOMMENDATION LT-2-2: The Joint Staff Director for Logistics, in coordination with TRANSCOM and the geographic combatant commands, should assess requirements for TALCEs and determine if increases are warranted. The Joint Staff Director for Logistics should recommend changes to Air Force structure if necessary.

MEDICAL SUPPORT (MS)

FINDING MS-1: In terms of training, configuration, supplies and language skills, the organization of DoD medical units during Hurricane Mitch operations was not optimized for providing disaster assistance to local populations. Significant enhancements would result from investing in disaster response capabilities, without diminishing the primary job of medical units: caring for U.S. forces.

DISCUSSION: DoD medical units deployed in the aftermath of Hurricane Mitch had to be prepared for a range of assigned tasks: assessment of health care priorities; provision of acute care to U.S. forces; prevention of epidemic diseases that might affect U.S. forces or the local population; and “emergency and episodic care of host nationals” (Ref. 67). Overall, these units appear to have performed well, under trying circumstances, in large part because the SOUTHCOM Surgeon was familiar with the AOR and medical problems likely to be encountered there. However, a number of reports indicate that the transition in mission from care of U.S. forces to care of the local population did not proceed smoothly. A number of issues affected the ability of DoD medical units to provide care to local communities. Among these were the following:

- **Language Issues:** Unit personnel were often unable to diagnose illnesses due to lack of Spanish language skills; the labeling of medications distributed by U.S. forces suffered from the same language problem.
- **Supply Issues:** Units reported shortfalls in pre-packaged humanitarian medical aid packages; pre-packaged medical equipment and supplies were often not deployable to remote locations on available transport.
- **Unit Configuration Issues:** Not surprisingly, DoD medical units were composed of skills and specialties appropriate for treating traumatic injuries in healthy combatants; medical units were not configured with sufficient pediatricians and other medical specialties more appropriate to the patient population in poor communities of the developing world, and the epidemics that this population was likely to suffer from.

RECOMMENDATION MS-1-1: Surgeons at geographic combatant commands should review the medical skills and equipment required to meet the needs of civilian populations in disaster-prone nations in their respective AORs, and be prepared to advise staff planners of medical assets required in the aftermath of large-scale, rapid-onset, natural disasters.

RECOMMENDATION MS-1-2: The Surgeons General of the Military Services, in coordination with the Office of Peacekeeping and Humanitarian Assistance

and the Joint Staff (Deputy Director of Medical Readiness), should ensure that U.S. medical units assigned disaster response missions are provided, to the extent practicable, with the appropriate staff, prepackaged supplies, and language skills necessary for accomplishing their assigned missions.

FINDING MS-2: U.S. military forces deployed to Central America did not in general require intensive psycho-social assistance during the Hurricane Mitch relief effort. However, psychological assistance, combat stress or similar teams may be required after natural disasters in the future, both to assist U.S. forces and counsel local populations.

DISCUSSION: Rapid onset natural disasters such as earthquakes, floods and storms may result in large numbers of deceased victims, and traumatic injury and/or widespread psychological distress among survivors. The majority of American forces serving in JTF Aguila or JTF Bravo did not engage in direct rescue efforts, treatment of traumatic injury, or processing of cadavers. Nonetheless, the stress of relief operations, the human tragedy encountered in disaster settings, and the likelihood that DoD personnel would be required to handle seriously injured or deceased disaster victims in future crises all suggest that the deployment of psychological assistance units with the relief effort should be a priority. When properly configured, and when they possess local language capability and local cultural sensitivity, psychological assistance teams may be able to assist local populations as well. Following Hurricane Mitch, DoD medical personnel provided valuable and well-received training to medical colleagues from the affected Central American nations in trauma counseling of disaster victims.

RECOMMENDATION MS-2-1: Supported and supporting commands should anticipate the need for psychological assistance units in natural disaster relief efforts. Efforts should be made early in the planning process to provide these teams with sufficient language capacity to assist local populations.

FINDING MS-3: DoD veterinary units were a useful supplement to relief efforts during Hurricane Mitch operations. Their work with disaster victims' livestock helped the process of transition from relief delivery to recovery and self-sufficiency.

DISCUSSION: DoD veterinary units supported JTF Bravo during the Hurricane Mitch relief operation and, throughout Hurricane Mitch operations, SOUTHCOM reported that U.S. military veterinary personnel cared for more than 8,000 animals in the AO (Ref. 43). Such units may have an important direct support role when military working dogs are employed in the relief effort. A supplementary benefit, especially important in disaster settings where local populations rely on herds for basic sustenance, is the vaccination and care of livestock. Assisting disaster victims to maintain their livestock may be a cost-effective mechanism for rebuilding local nutrition and economic capacity, thereby hastening the end of direct relief operations. USAID missions in affected nations are likely to be good sources of information on the extent and nature of livestock activities in the country, and on the types of animal diseases prevalent in the region.

RECOMMENDATION MS-3-1: Staffs at geographic combatant commands or JTF headquarters tasked with planning natural disaster relief operations should consider the potential benefits of deploying veterinary units in the disaster relief effort. Discussions with U.S. Embassy and USAID officials in the affected country could help determine the importance of making an investment in veterinary units to hasten the transition from relief to recovery operations.

FINDING MS-4: During the Hurricane Mitch response, DoD medical personnel appropriately recognized the capabilities of host nation and regional health care professionals. Linking DoD medical units and personnel with civilian health care providers, between disasters and during the early stages of the disaster response, improves the quality and sustainability of health care for disaster victims.

DISCUSSION: U.S. military medical personnel deploying to Central America for relief operations worked closely with local medical personnel, including government health care officials in affected nations, officers of the Pan-American Health Organization (PAHO), and medical staffs of NGOs. This professional-to-professional interface included joint assessment of medical needs, joint planning for disease prevention and other public health programs, training, provision of supplies, consultation on medical missions, and joint patient care missions for disaster victims. In Central America in Mitch's aftermath, as in many post-disaster situations, highly skilled host nation medical personnel were present and engaged in the relief efforts, even if medical delivery systems were disrupted by the storm. SOUTHCOM's recognition of the significant civilian medical assets already on the ground, and engagement with those assets, improved the overall relief operations and reduced the number of U.S. military medical personnel required to be deployed to the AO.

Subsequent to the two major hurricanes in the fall of 1998, and in large part due to successful coordination during the storms, SOUTHCOM has intensified its liaison activities with PAHO throughout SOUTHCOM's AOR. Both SOUTHCOM and PAHO staff interviewed for this study expressed confidence that the liaison activities would benefit victims following the next major natural disaster in the hemisphere.

RECOMMENDATION MS-4-1: Between disasters, command surgeons at geographic combatant commands should undertake "mapping" projects to locate civilian health care organizations – national or regional – within the AOR that provide significant levels of assistance in the aftermath of rapid-onset natural disasters. The command surgeons should establish ongoing information exchange with these organizations. SOUTHCOM's efforts to exchange liaison personnel with and otherwise engage the Pan-American Health Organization (PAHO) could serve as a model for this type of cooperation.

RECOMMENDATION MS-4-2: In the early stages of a disaster response, command surgeons at geographic combatant commands should establish contact with regional, host nation, and international health care organizations likely to respond to the

crisis. Command surgeons should seek to field joint health needs assessment teams, and establish mechanisms for ongoing information exchange among health care professionals. The efforts of SOUTHCOM to deploy medical teams to host nation health ministries during Hurricane Mitch, in order to assist the assessment effort, is a useful model.

ORGANIZATION AND TRAINING (OT)

FINDING OT-1: DoD-sponsored disaster response exercises that involved host nation, NGO, IGO, IO and USG participants significantly helped prepare disaster responders for Hurricanes Georges and Mitch. Future exercises can be enhanced by (1) addressal of financing issues; (2) greater participation by forward-deployed DoD units and personnel; (3) more participation by NGOs, IGOs, and IOs; and, (4) Country Team and Washington interagency representation in the exercises.

DISCUSSION: During an interview conducted for this study, the head of El Salvador's national disaster response agency³³ related his gratitude for the opportunity to participate in HA/DR exercises sponsored by SOUTHCOM. He went on to relate how the storm track of Hurricane Mitch so resembled a hypothetical hurricane he encountered during training in Miami that his Salvadoran colleagues joked "the gringos staged the storm [Hurricane Mitch]." Although not all training exercises are as directly relevant as that particular *Fuerzas Armadas* Humanitarian (FAHUM) session was for the director of the Salvadoran National Emergency Committee, it is obvious that many responders within and outside the USG have benefited from SOUTHCOM, other DoD, and USG civilian exercises on natural disaster response.

Based on the Hurricane Mitch experience, four issues need to be addressed in the DoD exercise program, to make these sessions even more relevant:

- **Addressing financing issues during exercises:** Many exercises assume adequate financing for relief operations and few operational impediments associated with accessing or accounting for funds, even though budgetary issues loom large in actual disaster response planning and execution. Future HA/DR exercises sponsored by geographic combatant commands and other DoD organizations should include segments dealing with resource mobilization, tracking and accounting, including mobilization of funding from non-DoD sources.
- **Ensuring participation from MILGPs, DATTs, and other forward deployed personnel:** Although these personnel sometimes attend HA/DR exercises to accompany host nation attendees, the degree of participation by forward deployed personnel does not yet match their actual value to disaster relief operations. Moreover, scenarios employed in disaster exercises often

³³ The Comité de Emergencia Nacional (National Emergency Committee), or COEN

downplay the considerable role of forward deployed units in the DoD response, especially during the early stages of the disaster.

- **Getting the right people and the right number of people from NGOs, IGOs, IOs, and other civilian response organizations:** Despite improvements in recent years, non-USG civilian response agencies are still underrepresented at DoD training exercises, relative to the scale of their actual performance during most HA/DR operations. In part, this underrepresentation of civilian agencies is caused by the limited staff resources available within these organizations to attend the array of U.S. military training exercises available, and in part to lack of clarity on the part of civilian agencies about the relative priority of the large number of training exercises to which they are invited.
- **Getting relevant members of the USG Country Teams and interagency actors from Washington engaged in exercises:** U.S. Ambassadors, USAID Country Directors, other senior members of the Country Team, Mission Disaster Response Officers (MDRO), NSC staff, OFDA staff from Washington, and others all play critical roles in formulating and executing the USG's disaster response plan. Substantial, high-level participation by these officials in DoD exercises, and scripting of their respective roles in exercise scenarios, would enhance the value of exercises, especially for DoD personnel not fully familiar with the roles of these entities.

RECOMMENDATION OT-1-1: Planning staffs at geographic combatant commands should incorporate budget issues and all relevant groups of participants in training exercises, both in scenario development and in role-playing during the exercises.

RECOMMENDATION OT-1-2: The Office of Peacekeeping and Humanitarian Assistance should initiate a study to map current and planned DoD exercises with significant HA/DR elements, establishing a priority list for participation by NGO, IO, IGO, and UN representatives. PKHA should convene meetings with civilian agency personnel, utilizing this mapping and priority list as the basis for negotiations with civilian agency personnel about attendance at training exercises.

PUBLIC AFFAIRS (PA)

FINDING PA-1: Public affairs (PA), especially PA targeted to host nation populations, could have been better managed by DoD and the USG in general during the response to Hurricane Mitch. Improvements in interagency doctrine, planning, staffing, and coordination are required to improve PA output during future large-scale foreign disasters.

DISCUSSION: An optimal public affairs campaign for Hurricane Mitch operations would have been based on prior planning, and would have allowed the USG to respond quickly and efficiently to all audiences, domestic and foreign. However, no overall, coordinated interagency PA plan existed for Hurricane Mitch operations. The spontaneity of the subsequent public affairs campaign resulted in several negative consequences for DoD, specifically, and the USG in general. Notable areas in need of improvement follow below.

1. Initial USG PA Efforts

To mobilize domestic public support for foreign disaster operations like those conducted in the wake of Mitch, the public needed to be aware that the USG was responding to an international disaster affecting vital U.S. interests, and needed to hear the objectives of the response articulated. As early as 1 November 1998, as the storm was still over Central America, USG public affairs personnel did issue statements and encouraged an active public affairs response within their respective agencies. USG agencies engaged in relief efforts issued press releases and held press conferences almost daily thereafter. A review of the print media and national television networks from that period reveals media coverage of the relief operations within hours of the information being released by USG authorities, despite other breaking international stories and initial uncertainty about the scale of damage in Central America. By 5 November, the President received positive coverage from national media when he announced that USG assistance had reached \$3.5 million, with more help on the way. However, PA efforts were not coordinated among the responding agencies; each agency proceeded independently. This process resulted in media inability to report on the overall USG disaster response; instead they reported USAID's, the White House's, and DoD's separate announcements and statements.

2. PA Directed to Host Nation Audiences

The USG PA campaign did not fare as well in its attempts to reach audiences in the disaster-affected nations. For example, despite the fact that U.S. military units had not been in Nicaragua for almost twenty years, there was no announcement made by the Nicaraguan national media that a U.S. task force had been assembled to aid that nation. Nicaraguan public opposition leaders used the relative lack of information as a tool against the USG, filling the information vacuum with negative allegations about potential U.S. military operations in their nation. In Honduras and El Salvador, the national press also manipulated the relative lack of information about USG and DoD efforts to report that other countries were giving more assistance and responding faster. Reports in host nation media of other nations eclipsing the USG effort, picked up in international media, helped fuel intense efforts in Washington to ratchet up DoD participation in the relief effort, even before all relevant damage assessment data was available.

3. Availability of DoD PA Resources

As both damage estimates and public interest in the storm intensified in the immediate aftermath of Hurricane Mitch, U.S. military commands engaged in an ardent effort to locate sufficient trained personnel to manage the public affairs requirements. SOUTHCOM's public affairs staff required immediate augmentation, but could not obtain it. Consequently, the JTF commanders did not receive adequate public affairs guidance, and did not initially have public affairs elements on their staffs. The JTF PA staff positions were eventually filled by Reserve personnel on two-week training missions. The JTF commanders reported that this mobilization process was slow and did not give them the PA support they needed. The SOUTHCOM PA office attempted to fill the gap by deploying some of its personnel to the disaster scene. The public affairs personnel who deployed to the JTFs worked hard but were relatively inexperienced, and often lacked proficient Spanish language skills. This situation left the JTF commanders with constant PA frustration, especially about gaps in the information that host nation audiences were receiving. These conditions were exacerbated by lack of equipment, e.g. laptop computers, communications equipment, and photocopiers. Skilled Reserve PA officers stated that they were frustrated by the lack of up-to-date equipment to support the PA missions. The PA personnel were able to find some equipment on the local market but it was antiquated, bulky, and unreliable. JTF commanders and staff, on the other hand, expected that PA personnel would deploy with the appropriate equipment; the

arrival of Reserve PA officers with little more than a notepad or laptop computer was an additional source of frustration for the JTF commanders.

4. Doctrinal Issues

A review of current military public affairs doctrine reveals several gaps, especially about the lead responsibility for working with host nation media. During interviews conducted for this study, military personnel expressed a variety of opinions about who is responsible for working with the local media in a foreign country. Joint Publication 3-61, *Doctrine for Public Affairs in Joint Operations*, states: "PA and Civil-Military Operations (CMO) personnel disseminate information to local populations." However, the method by which they are supposed to disseminate this information is not clear. DoD military and civilian personnel expressed the view, during interviews for this study, that providing information to host nation media is primarily a U.S. Information Agency (USIA) responsibility, since USIA has permanent staff on virtually every U.S. Embassy's Country Team.³⁴ If U.S. military commands in fact have lead responsibility for host nation PA activities, then additional personnel will need to be trained and DoD will have to find methods other than the use of voluntary Reservists to manage the PA campaign, during the media-intense aftermath of major disasters abroad. Another issue that arose during the disaster relief operations was whether standard U.S. military PA organizations were appropriate for major natural disasters overseas. Some DoD PA personnel questioned whether mechanisms like Visitors Bureaus and Joint Information Bureaus were useful under the circumstances encountered.

5. Interagency Coordination

Generally, U.S. military PA and USIA³⁵ staff reported that they cooperated well in the nations affected by Hurricane Mitch, although most of them had little experience working together previously. It appears that each group had somewhat unreasonable expectations about the other. For example, both staffs expected the other to be experts in

³⁴ Although still widely referred to as "USIA," elements of that formerly independent USG agency have now been integrated into the Office of International Information Programs (IIP) at the Department of State, as of 1 October 1999. IIP doctrine states that it is the principal international strategic communications service for key international audiences, such as the media, government officials, opinion leaders, and the general public in more than 140 countries around the world. The Office of IIP reports to the Under Secretary of State for Public Diplomacy and Public Affairs.

³⁵ Each embassy now has a Public Affairs Officer who has direct links to the IIP office in Washington. Most embassies staff an Information Resource Center for host nation publics.

disaster relief public affairs. The USIA staff expected the military PA personnel to be able to handle the local media, despite their lack of experience or training in Central America, limited exposure to post-disaster environments, and the constant rotation of PA personnel. Many of the military PA personnel expected the USIA staff to be able to handle all local media issues, despite generally low level of staffing at most Embassies. If the civilian and military PA officers had planned and worked together before the disaster, these inaccurate expectations could have been resolved.

The Hurricane Mitch disaster response demonstrated that PA requires focused DoD attention in the aftermath of major natural disasters, when media interest is intense and media reporting can shape the scope and content of the USG response. Trained PA personnel need to be on staff of all key military commands as the disaster unfolds, with appropriate guidance as to their roles and with appropriate equipment to accomplish the assigned mission.

RECOMMENDATION PA-1-1: The Office of Peacekeeping and Humanitarian Assistance should establish a working group with USAID/OFDA, the DoS Under Secretary for Public Diplomacy and Public Affairs, and the NSC staff to develop a USG Response Plan for international disaster PA. The Plan should clarify each agency's responsibilities for domestic and foreign PA. The Plan should designate a Coordinator for Public Affairs to serve as PA spokesperson for the overall USG relief effort. In anticipation of a disaster, the designated Coordinator for Public Affairs would develop operating guidelines for all participating USG agencies and would be responsible for establishing a USG Information Center during the disaster, where the various responding agencies would coordinate their announcements.

RECOMMENDATION PA-1-2: The Joint Staff should conduct a review of military public affairs doctrine with two specific objectives: (1) clearly delineating the range of DoD PA roles and responsibilities during a foreign natural disaster, including coordination with USG civilian agencies; and (2) establishing a lead responsibility within DoD for each of the roles and responsibilities identified.

RECOMMENDATION PA-1-3: Geographic combatant command staffs should ensure that natural disaster FUNCPLANS clearly delineate the PA responsibilities of the command, and subordinate or supporting commands, during a rapid-onset natural disaster. The FUNCPLAN should delineate the essential coordination points and methods for working with other USG agencies. The FUNCPLAN should identify the method for rapidly deploying existing PA staff to the AO, supplementing the DJTFAC, if

any, with PA support, and providing stable PA staffing to JTFs tasked with disaster relief missions.

RECOMMENDATION PA-1-4: The Office of Peacekeeping and Humanitarian Assistance, in conjunction with the Joint Staff and geographic combatant commands, should conduct a review of the current system for PA augmentation of JTFs. The review should examine options for augmenting PA capabilities during a disaster.

RECOMMENDATION PA-1-5: Geographic combatant commands, Joint and Service schools, and other commands or units conducting disaster response exercises should ensure that scenarios developed for such exercises include public affairs elements, that USIA staff at relevant embassies and PA offices from the geographic combatant commands are invited to participate in exercises, and that these officers are given role-playing opportunities in the exercise scenarios.

FINDING PA-2: The arrival of large numbers of distinguished visitors (DV) or very important persons (VIPs), from the USG, the United States, or abroad, complicated disaster relief operations in the immediate aftermath of Hurricane Mitch. Given the media and public interest in large-scale disasters, commanders tasked in the future with disaster missions should anticipate the arrival of DV/VIP contingents in the disaster AO.

DISCUSSION: In interviews and reports, many personnel involved in the Mitch response stated that, during the weeks immediately following Mitch, they were overwhelmed with logistical requests from DVs/VIPs. Such visitors were arriving in Central America during the early lifesaving phases of operations, when the U.S. military was still transporting food via helicopters, and tradeoffs were required as to whether to use available air transport space for visitors or critical relief supplies. U.S. military and Country Team personnel had to facilitate transportation, lodging, food and shopping privileges for the visitors. The visitors also requested visa facilitation for travel throughout Central America. The exact numbers of visitors who requested assistance could not be determined, but numerous personnel mentioned the burden.

Interviewees also frequently stated that they understood the value of DVs/VIPs in terms of mobilizing public support and resources for relief operations. These personnel did not call for the termination of DV/VIP visits to the disaster-affected area. Rather, they sought more detailed guidance on the relative priority of supporting visitors, and the degree of support to be provided amid the austere environment of disaster relief operations. Specifically, commanders and units faced complex choices between placing DV/VIP visitors on helicopters or placing relief supplies on those same aircraft, and would have benefited from clear, consistent guidance on how to proceed under those circumstances.

RECOMMENDATION PA-2-1: The Joint Staff should review existing or draft doctrine on PA and disaster operations to ensure that documents, including draft Joint Publication 3-07.6, provide adequate guidance to geographic combatant commanders and JTF commanders on the treatment of DV/VIP visitors in the aftermath of major foreign disasters, especially during the lifesaving stages of those disasters. Such guidance should establish a clear priority for the use of transport space, i.e. when transport of DV/VIP visitors might supplant emergency cargo.

RECOMMENDATION PA-2-2: Staffs at geographic combatant commands should provide early alert to JTF Commanders and other commands deploying on disaster relief missions on the likelihood of DV/VIP visitors, and should establish a single

point of processing for such visitors. Commander's guidance issued by geographic combatant commanders should provide a clear sense of the priority to be accorded to DV/VIP contingents.

FINDING PA-3: During the Hurricane Mitch response, many organizations sought to use the Denton Program to transport donated supplies to Central America. This caused numerous problems, as the Denton Program is not designed to operate efficiently during a rapid-onset disaster.

DISCUSSION: The Denton Amendment was passed by Congress in 1985 and is codified at 10 USC 402. It authorizes the SECDEF to transport privately donated items to another country for humanitarian purposes, on a space-available basis and at no cost to the donor. Although participants in this program often assume that the Denton Amendment covers air transport only, the statute – while it does limit the type of consignee and mandates a foreign destination – does not limit the mode of transportation. The Denton Program is not a regularly functioning, rapid logistical support system for disaster responses; it normally requires four to six weeks to approve cargo to be moved via the Denton process.

DoD, DoS, and USAID have developed procedures for handling donated “Denton” cargo.³⁶ Despite the agencies’ attempts to clarify the process, the Denton procedure was not widely understood by the general population. Many within the American public believed that, if they collected items, then the USG would provide all necessary logistical support to move the supplies to the disaster-affected population, ignoring the space-available requirement that is central to the Denton Amendment. Moreover, the involvement of three USG agencies at various stages of the transport approval process made management and quality control diffuse and uncertain.

During the Hurricane Mitch response, there was political pressure seeking Denton support from state governors, Members of Congress, and others requesting support for specific charitable organizations. Such interest is evident by the high number of calls made to the OFDA Operations Center by Congressional staffers, the number of letters answered by USAID’s legislative affairs staff, and the reports requested by high-level DoD officials. This high-level interest resulted in items being “pushed” through the interagency Denton program with minimal quality control. In some instances, the outcome was delivery to already overburdened logistics hubs in Central American of

³⁶ The law requires the SECDEF to make certain determinations about donated items, such as safety determinations. During Mitch operations, the Defense Security Cooperation Agency’s (DSCA) Office of Humanitarian Assistance and Demining made these determinations for the SECDEF. DSCA personnel had worked closely with their counterparts in other agencies on the Denton program long before Mitch.

items such as medicines beyond their useful life, winter coats, and inappropriate food items.

Regrettably, DoD and other USG PA officers added to the over-utilization of the Denton Amendment after Hurricane Mitch. Some encouraged reporting on the Denton cargo process by inviting the press to fly on the Denton Flights and see cargo delivered. The news media gave substantial coverage to Denton flights, which encouraged requests for support by other groups.

Denton cargo was often flown via the Air National Guard and U.S. Air Force Reserve aircraft during rescheduled training flights. These quickly rescheduled flights transformed “space available” flights into dedicated Denton cargo “training” flights. A number of U.S. military interviewees involved in Mitch humanitarian operations believed that DoD strategic assets were diverted from their disaster relief missions or military support missions to transport Denton cargo, although these allegations could not be substantiated. Overall, many DoD personnel considered the burdens of the Denton program a major irritant.

One positive outcome of widespread use of Denton Amendment transport during the Hurricane Mitch response is a reinvigorated debate within the civilian humanitarian community and the media on the value of sending unrequested donated items to a disaster-affected country, especially after a rapid-onset major disaster when transport systems are overburdened. This debate has stimulated recommendations that cash only should be requested from charitable organizations or individuals. Many organizations and relief personnel state that un-requested items only add to the burden on disaster relief workers and have very little positive impact on disaster victims.

RECOMMENDATION PA-3-1: DSCA, in coordination with the Office of Peacekeeping and Humanitarian Assistance and the Joint Staff, should form an interagency working group with DoS and USAID to review the management of the Denton Program. The interagency working group should consider designation of one USG agency as manager of private donations during a disaster, seeking Congressional support if necessary to alter legislative language in the Denton Amendment to accomplish that purpose. The designated lead agency would be responsible for Denton policies, plans, operating guidelines, and public information. The head of the lead agency would be responsible for overall quality control of donated goods coordinating during a disaster.

RECOMMENDATION PA-3-2: The Under Secretary of Defense (Programs Analysis and Evaluation) should conduct a financial and program review of the Denton

Program to identify hidden costs and establish the true cost of the program. In conjunction with the Assistant Secretary of Defense (Legislative Affairs), the review information should be presented to appropriate Congressional committees to determine whether the current Denton statute should be amended.

RECOMMENDATION PA-3-3: The Office of Peacekeeping and Humanitarian Assistance, in coordination with DSCA and the Assistant Secretary of Defense (Legislative Affairs), should design and implement an awareness campaign for Members of Congress and staffs on the appropriate operation of the Denton Amendment, especially its space-available requirement. The objective of the campaign would be to reduce the Congressional pressure for over-utilization of the Denton Amendment during future foreign disasters.

RECOMMENDATION PA-3-4: DSCA should coordinate an enhanced public affairs campaign with USAID's Office of Private and Voluntary Cooperation (PVC), which currently provides information to the general public on the Denton Amendment. The purpose of the enhanced campaign would be to eliminate unreasonable public expectations about the Denton Amendment, and to prevent large quantities of unneeded items from being collected during a disaster

PERSONNEL SUPPORT (PS)

FINDING PS-1: During the Mitch operations, difficulties accompanied the decision to use individual augmentees, as well as the process of locating and designating them for deployment. When individuals were finally deployed, there was no joint personnel system that properly tracked individual deployments, mission status, and redeployment.

DISCUSSION: During Hurricane Mitch operations, USACOM and SOUTHCOM staffs had a difficult time developing the manning document for the Joint Task Force. To highlight the problems, several personnel mentioned the initial decision on designating the staff of the newly formed JTF Aguila. Initially, the JTF staff was going to be designated individual by individual, a task to be performed by SOUTHCOM J-1. The JTF commander expressed concern over this planned procedure; he stated that he needed a staff that was used to working together. Once the decision was made to locate a unit to serve as the headquarters for JTF-A, the responsibility for finding the staff shifted to SOUTHCOM J-3. Fortunately, SOUTHCOM J-3, Joint Staff, and ACOM staff were able to find a unit to provide a cohesive staff. The various SOUTHCOM staff sections expressed concern over the lack of available guidance on how to structure a JTF staff, inability to gather information on available personnel (whether in a unit or individually), and pressure to move quickly.

While under pressure to do something quickly, several staff sections noted the opportunities for better staff coordination. The J-1 staff noted that they could easily have supported the request for deployment orders, but they were not included in those discussions. According to Joint Pub 1-0, the J-1 should be involved with determining the manpower requirements and the sourcing of personnel for the JTF headquarters. In addition the J-3 section indicated that they did not always know the status of individual deployments, as opposed to unit deployments.

Individual augmentation was widely used for Hurricane Mitch operations. Individual augmentation included both non-unit temporary duty personnel (TDY) and non-unit temporary additional duty (TAD) personnel.³⁷ The individual augmentation process, as described in CJCSI 1301.01A, was too cumbersome and slow for responding

³⁷ For more information related to individual Reserve augmentation, see the Reserve Affairs section of Appendix B of this report.

to a rapid onset disaster.³⁸ CJCSI 1301.01A does not make any references to accelerating or compressing the augmentation process for disasters, emergencies, or contingencies. SOUTHCOM and JTF staffs indicated that disaster relief operations will probably continue to require large numbers of individual augmentees in future missions. Therefore, changes in DoD doctrine, to reflect the need for quick augmentation during rapid onset disasters, would be helpful.

Once units and individual augmentees report to the JTF, the J-1 must ensure the timely preparation and submission of personnel strength reports, performance evaluations, and awards for assigned individuals in accordance with the established guidelines of the individual Services. During Mitch the quality and timing of the personnel strength reports could have been improved. The personnel strength reports were especially sensitive during Mitch operations. Certain countries imposed limits on the number of personnel allowed in country at one time. Tight budgets limited the numbers for deployment as well. Gathering data from a JTF spread over three countries, with inadequate communications, made the J-1 information gathering task difficult. In addition the individual Service reporting formats varied widely. To add further complexity, JTF Bravo and JTF Aguila submitted to SOUTHCOM differently formatted reports. Personnel information management during Mitch was slow and, at times, unreliable.

RECOMMENDATION PS-1-1: The Joint Staff and Joint Forces Command, especially J-1 and J-3, should explore bridging the gaps in developing force requirements for a JTF. They should review the capabilities and potential abilities of their respective systems (i.e. JOPES and personnel information systems) to determine whether the systems can work together, whether the systems provide them with any tools they are not currently using, and what other tools they may need when going through manning decisions. [See also Finding CC-2].

RECOMMENDATION PS-1-2: Geographic combatant command staff, especially J-1 and J-3, should work together when developing personnel requirements for JTFs, whether individual augmentees or unit deployments. In advance of the disaster, they should develop model Requests for Deployment Orders and an augmentation plan for the FUNCPLAN.

³⁸ This new instruction was issued 30 October 1998, but this change did not appear either to help or hinder the process during Mitch. Personnel who were interviewed for this report referred to CJCSI 1301.01.

RECOMMENDATION PS-1-3: The Joint Staff should review the process for individual augmentation stated in CJCSI 1301.01A and develop procedures for accelerating individual augmentations during disaster or emergency situations.

RECOMMENDATION PS-1-4: The Joint Staff and Joint Forces Command should explore the development of a Joint Personnel Information management system. The system would have to be deployable, include status reports on manning requests, strength reporting, and information on individual service requirements. Such a system will probably require long term development efforts, and its development should be undertaken in conjunction with the Services to see if existing systems could be linked.

FINDING PS-2: Individuals who participated in Hurricane Mitch operations maintained high morale, both because of DoD attention to personnel support systems and job satisfaction from assisting victims.

DISCUSSION: Recent years have witnessed a great deal of discussion and analysis within the U.S. military community about the reputed negative morale and retention outcomes of SSC operations such as Bosnia or Kosovo. However, in contrast to the perception that SSC operations diminish morale among U.S. military personnel, commanders who were engaged in Hurricane Mitch operations reported improved morale on the part of deploying units and, anecdotally, higher reenlistment rates. The general impression among officers commanding U.S. troops during the relief operation was that the troops appreciated the opportunity to help those in need and the opportunity to employ their specialties. Commanders noted that, in contrast to longer duration peacekeeping missions, disaster relief operations offered both a short-term assignment and a generally grateful host nation population – two items contributing to the morale of U.S. personnel. Another factor that may have contributed to high morale was the relatively late deployment of most U.S. forces. Much of the initial SAR, processing of cadavers, and treatment of traumatic injury had been completed by the time the bulk of U.S. military personnel arrived in Central America. In addition, most U.S. forces were not deployed to the grimmest disaster sites, like Nicaragua’s Las Casitas volcano where thousands were buried by mudslides.

Also contributing to morale was the perception on the part of the personnel of the JTFs that, generally speaking, they received adequate personnel support during their deployment. Draft Joint Pub 3-07.6 states that a deployed JTF should maintain proper support for its personnel. “Proper support” includes religious support, legal assistance, and morale, welfare, and recreation (MWR) abilities. MWR activities were very important for the success of the mission as well as personnel satisfaction. Reported favorites among MWR activities included soccer or football games with the host nation citizens.

RECOMMENDATION PS-2-1: Although troops may welcome deployment to disaster relief operations in many cases, such operations can be stressful. The staff of geographic combatant commands should assign appropriate priority to MWR support early in the planning process.

RESERVE FORCES (RF)

FINDING RF-1: The Hurricane Georges and Mitch operations reinforced the need for improving the timeliness, adequacy, and effectiveness of Reserve Component voluntary responses to unexpected overseas operations.

DISCUSSION: During the response to Hurricanes Georges and Mitch, Reserve Component (RC) personnel were an integral part of the military's response force. Those interviewed stated that they needed the RC personnel during all phases of the operations and could have used more RC assistance during the planning phase. Once the RC personnel were tapped, they were used in a variety of positions and from all Services.

RC personnel were important at all levels of the disaster response, from Washington interagency coordination to work at the JTFs. RC personnel were used in several Washington offices to decrease individual staff workloads. For example, the DSCA Office of Humanitarian Affairs used RC personnel as additional staff to manage the increased Denton requests. Various SOUTHCOM staff reported that Active Component (AC) positions were not adequate to staff a Crisis Action Cell (CAC) twenty-four hours a day for an open-ended duration. They needed RC personnel to supplement the CAC and ameliorate increased workload of staff sections. Although these RC staff augmentations were considered essential by permanent staff, the SOUTHCOM staff found it difficult to quickly access RC personnel.

In addition to their contributions in headquarters positions, RC personnel were needed as part of the actual response. The RC personnel often filled critical positions on Joint Task Forces such as Civil Affairs (CA), Psychological Operations (PSYOPS), and Public Affairs (PA). There simply were not enough AC personnel to fill these positions. For example, 96 percent of total U.S. military CA personnel are in the RC. In addition, the AC personnel in these types of specialties are the most deployed units in the AC, e.g., members of high demand, low density specialties. The few AC personnel in these units are often already deployed when a disaster strikes. Individuals interviewed for this study reported that the military specialties that reside primarily in the RC must be accessed quicker than they were during Mitch operations.

Generally, Chapter 51 of Title 10 United States Code (USC) strictly limits the use of RC personnel. RC personnel can be used to respond to foreign disasters on a voluntary or involuntary basis. Involuntary call-ups have been limited in recent years to the following overseas conflictive disasters: Bosnia, Southwest Asia, and Kosovo. For

policy reasons, DoD has stated in “Activation, Mobilization, and Demobilization of the Ready Reserve,”³⁹ that it will limit the use of involuntary call-ups. The use of an involuntary call-up of RC personnel for Hurricane Mitch operations was never seriously considered, according to DoD sources. The prevailing argument at that time was that multiple contemporary involuntary call-ups were already placing considerable demands on families and employers of Reservists, and one more call-up would not have been supported by Congress, employers, or families. According to some DoD sources, it is considered highly unlikely that DoD would ever consider an involuntary activation for a foreign natural disaster.

If an involuntary call-up is not used, RC personnel can voluntarily respond to a disaster, which many did with alacrity during Hurricane Mitch operations. However, a number of issues that arose during that mission illustrate impediments to meeting all critical disaster response requirements through the voluntary mechanism:

- DoD has not issued any policy related to the voluntary use of RC personnel; each of the Service Secretaries independently developed rules relating to voluntary activation. This added unneeded confusion and delay during Mitch operations.
- The amount of funding often drove the type of orders issued during Mitch. During Hurricane Mitch operations, the JTF was supported with RC personnel primarily on two week training orders. However, this caused constant rotation and disruption for the various commanders. It also often caused confusion over whether the primary purpose of the deployment was training or disaster relief. The JTF commanders and staff officers stated that consistency and the need for fully trained personnel were essential to the successful use of RC personnel during disaster relief operations.
- Mitch relief operations required RC personnel with unique skills (such as language and knowledge of the local culture). Voluntary RC personnel could not be efficiently accessed and matched to the required skills during Mitch operations. Beyond language and cultural awareness skills, for example, many RC personnel reported to the geographic combatant command staff or JTFs with little or no joint training. RC personnel often struggled to understand the joint operating environment. Currently no system exists to facilitate a sufficient and qualified response from voluntary RC personnel.

³⁹ Directive 1215.10, July 1, 1995

- The geographic combatant command staff's ability to coordinate directly with certain Reserve units greatly enhanced that staff's planning ability. However, this direct pipeline to Reserve units does not exist throughout DoD.
- Voluntary activation of RC has received insufficient attention in doctrine, training and publications for AC personnel. When AC personnel complained, as they sometimes did, that voluntary RC personnel reported without required support and did not deploy in units, it was obvious that they did not fully understand the process of using voluntary RC personnel.

RECOMMENDATION RF-1-1: ASD (Personnel and Readiness), ASD (Reserve Affairs), Service Secretaries, and Joint Staff should provide additional high-demand, low-density RC capabilities in their assumptions for force structure when planning for disaster relief operations.

RECOMMENDATION RF-1-2: In conjunction with on-going efforts of the ASD (Reserve Affairs) Working Group on the use of RC personnel in peacetime, an in-depth review should be conducted on the voluntary use of RC personnel in rapid onset disasters. The review should establish guidelines and publish standard operating procedures with common definitions and recommended funding authorities. These publications should be made available to AC units and personnel.

SPECIAL OPERATIONS (SF)

FINDING SF-1: Rapidly deploying Special Operations Forces (SOFs) saved lives during the initial Emergency Phase of Mitch operations and facilitated the JTF operations during the Rehabilitation Phase.

DISCUSSION: SOFs receive training, assets, and sufficient latitude to perform well during emergency response operations. First, SOFs deploy quickly, within hours or days, rather than weeks. During Hurricane Georges operations, 29 SOF personnel began deploying for the Dominican Republic on 21 September 1998, the same day that Georges made landfall there. In addition, SOFs are known for being well acquainted with the customs, traditions, and language of an area of operations (AO). Upon arrival in the AO, they are well suited to put their capabilities immediately to use and accomplish their mission. Disaster related missions generally include: Recovery Operations, Special Reconnaissance, Civil Affairs, and Psychological Operations. These missions are focused more toward conflictive backgrounds, but can easily be adapted to a natural disaster relief situation. For example, recovery operations are to “locate, recover, and restore personnel or material held captive. . . .” During Phase I of Mitch operations, the “captor” was floodwaters, and disaster victims the “recovered personnel.” Navy SEALs and Army Special Forces saved hundreds of lives by performing search and rescue operations. They plucked victims from rooftops and raging floodwaters and immediately conducted triage.

Surveillance missions include performing assessments of a current operating environment. During Georges, Army SF teams used their surveillance skills to perform medical assessments with OFDA and Red Cross disaster specialists. Special reconnaissance and surveillance missions can include obtaining or verifying hydrographic, geological, and meteorological information. During Hurricane Mitch operations, SOFs performed search and rescue operations, but did not perform surveillance missions or assessments. It is unknown whether the SOF forces were unavailable for this mission or not considered for these tasks. As a result, assessment details were slowly gathered by other military and civilian personnel. If SOF had been considered for an assessment mission, they could have been used to collect this information quickly and efficiently. In addition, their experience in the area would have added value by placing the assessment data in proper context.

During Phase II of Mitch relief operations, Army SF and Navy SEAL teams were not used, but SOF civil affairs and psychological assets were. Many of these SOFs

reported that they were unable to fully accomplish their assigned tasks because of operational constraints. They were constrained by limitations of tours (See Reserve Forces Findings) and by force protection requirements. For example, the SOFs were not allowed to travel alone and they were required to wear their uniforms at all times.

RECOMMENDATION SF-1-1: When planning for disaster relief operations, staffs at geographic combatant commands should consider using Special Operations Forces for specialized tasks. In advance of a disaster, geographic combatant command FUNCPLANS should detail possible missions for use of SOFs.

APPENDIX C
BIBLIOGRAPHY

APPENDIX C

BIBLIOGRAPHY

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